Missouri Weekly Influenza Surveillance Report
2019-2020 Influenza Season[1]

Week 40: September 29, 2019 – October 5, 2019

All data are preliminary and may change as more reports are received.

Summary:

- The estimated influenza activity in Missouri is Sporadic[2].
- During Week 40, a total of 46 laboratory-positive[3] influenza cases (27 influenza A and 19 influenza B) were reported. No laboratory-positive cases of influenza were reported by the Missouri State Public Health Laboratory (MSPHL) during Week 40. The percentage of respiratory specimens testing positive for influenza in Missouri laboratories reporting to the National Respiratory and Enteric Virus Surveillance System (NREVSS) remained low during Week 40 (Figure 6).
- Influenza-like illness (ILI) activity was below baseline for both the Missouri Outpatient ILI Surveillance Network (ILINet) and the hospital emergency room visit chief complaint data reported through ESSENCE. The reported percentage of visits for ILI was 0.73% (Figure 5) and 1.36% (Figure 7) through ILINet and ESSENCE respectively.[4] The ILI data from a small number of sites located in the Northwest Region of the state is currently unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.
- No influenza-associated deaths have been reported in Missouri as of Week 40.[5]
- No influenza or ILI-associated outbreaks or school closures have been reported in Missouri as of Week 40.
- National influenza surveillance information is prepared by CDC and is included in the weekly FluView report, which is available online at http://www.cdc.gov/flu/weekly/fluactivitysurv.htm.

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[1]The 2019-2020 influenza season begins CDC Week 40 (week ending October 5, 2019) and ends CDC Week 39 (week ending September 26, 2020).

[2]Sporadic is defined as: Small numbers of laboratory-confirmed influenza cases or a single laboratory-confirmed influenza outbreak has been reported, but there is no increase in cases of ILI.

[3]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.

[4]Influenza-like illness (ILI) is defined by ILINet as fever (temperature of 100ºF [37.8ºC] or greater) and a cough and/or a sore throat without a known cause other than influenza. ILI is defined by ESSENCE as Emergency Department chief complaints for Influenza or (FeverPlus and (Cough or SoreThroat) and not NonILIFevers).

[5]All influenza-associated deaths became reportable in Missouri in 2016.

Surveillance Data:

Interactive Maps

The jurisdiction-specific influenza data are provided though interactive maps available at http://bit.ly/moflu19. *Click on the jurisdiction to view the influenza data specific to that jurisdiction.*

- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, CDC Week 40**
- **Reported Week-specific Rate per 100,000 Population, CDC Week 40**
- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, Season-to-Date**
- **Reported Rate per 100,000 Population, Season-to-Date**

Data Figures

Figure 1. Number of Laboratory-positive† Influenza Cases by Influenza Type, Missouri, CDC Week 40 (September 29, 2019 - October 5, 2019)*

Influenza Type	Week 40	2019-2020* Season-to-Date
Influenza A	27	27
Influenza B	19	19
Influenza Unknown Or Untyped	0	0
Total	46	46

†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv).

Figure 2. Number of Laboratory-positive† Influenza Cases and Case Rates by Age Group, Missouri, CDC Week 40 (September 29, 2019 - October 5, 2019)*‡

Age Group	Week 40 Cases	Week 40 Rate‡	2019-2020* Season-to-Date	2019-2020* Season-to-Date Rate‡
00-04	13	3.47	13	3.47
05-24	14	0.87	14	0.87
25-49	5	0.26	5	0.26
50-64	7	0.57	7	0.57
65+	7	0.73	7	0.73
Total	46	0.76	46	0.76

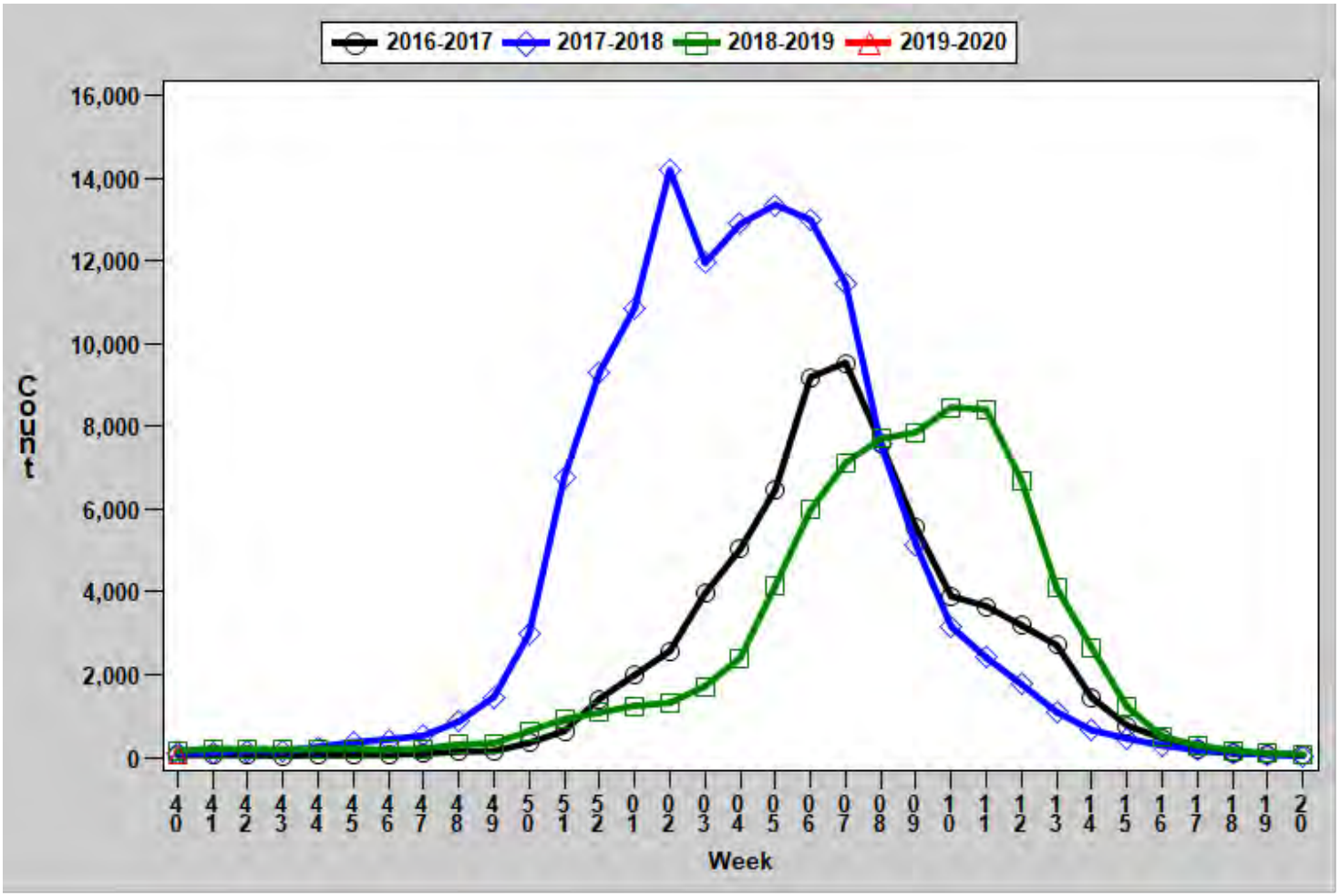
†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
‡Incidence Rate per 100,000 population

Figure 3. Number of Laboratory-positive[†] Influenza Cases and Case Rates by Region, Missouri, CDC Week 40 (September 29, 2019 - October 5, 2019)[*‡]

Region	Week 40 Cases	Week 40 Rate[‡]	2019-2020* Season-to-Date	2019-2020* Season-to-Date Rate[‡]
Central	2	0.30	2	0.30
Eastern	15	0.66	15	0.66
Northwest	4	0.25	4	0.25
Southeast	17	3.60	17	3.60
Southwest	8	0.75	8	0.75
Total	46	0.76	46	0.76

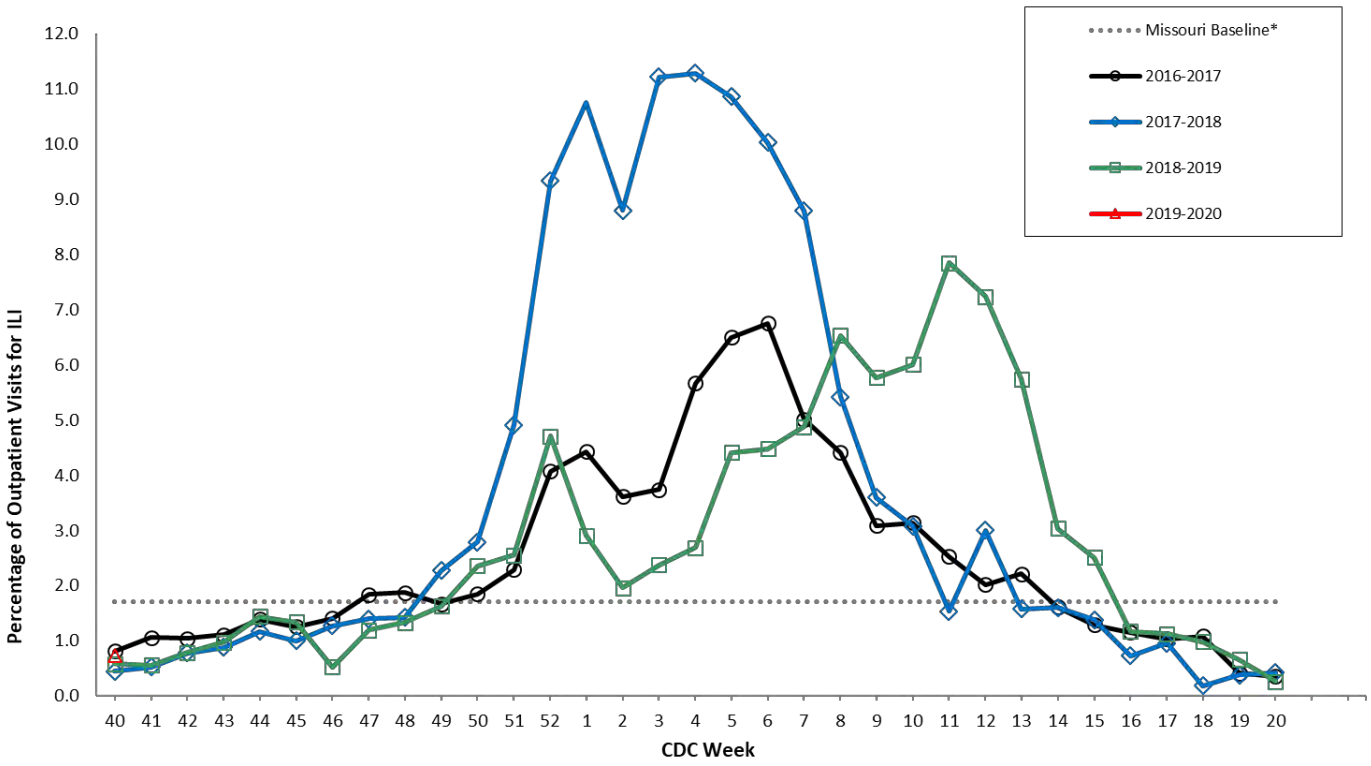
[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
[‡]Incidence Rate per 100,000 population

Figure 4. Number of Laboratory-positive[†] Influenza Cases by CDC Week, Missouri, 2016-2020[*]



[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).Data Source: Missouri Health Information Surveillance System (WebSurv).

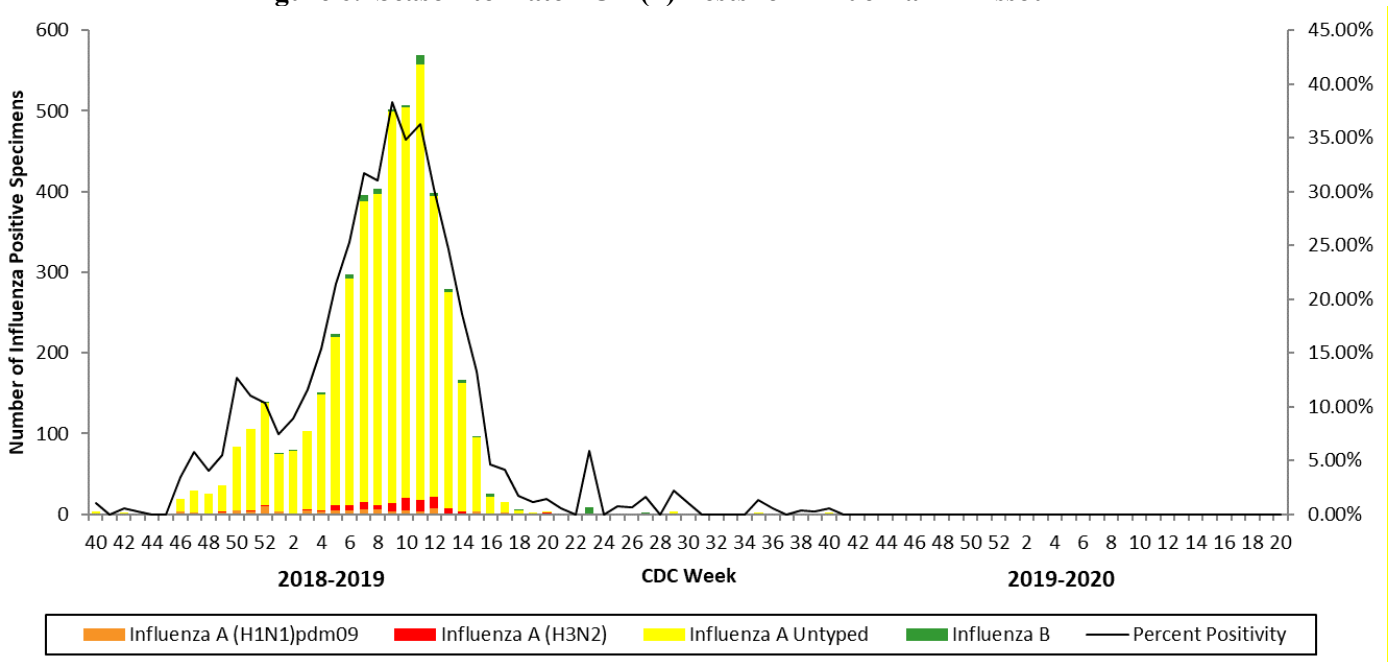
Figure 5. Percentage of Outpatient Visits for Influenza-like Illness (ILI), Missouri Outpatient ILI Surveillance Network (ILINet) 2016-2020*†



*The ILINet Region 7 (MO, IA, KS, NE) baseline is the mean percentage of patient visits for ILI during non-influenza weeks for the previous three seasons, plus two standard deviations. A non-influenza week is defined as periods of two or more consecutive weeks in which each week accounted for less than 2% of the season's total number of specimens that tested positive for influenza. Data Source: U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Centers for Disease Control and Prevention (CDC).

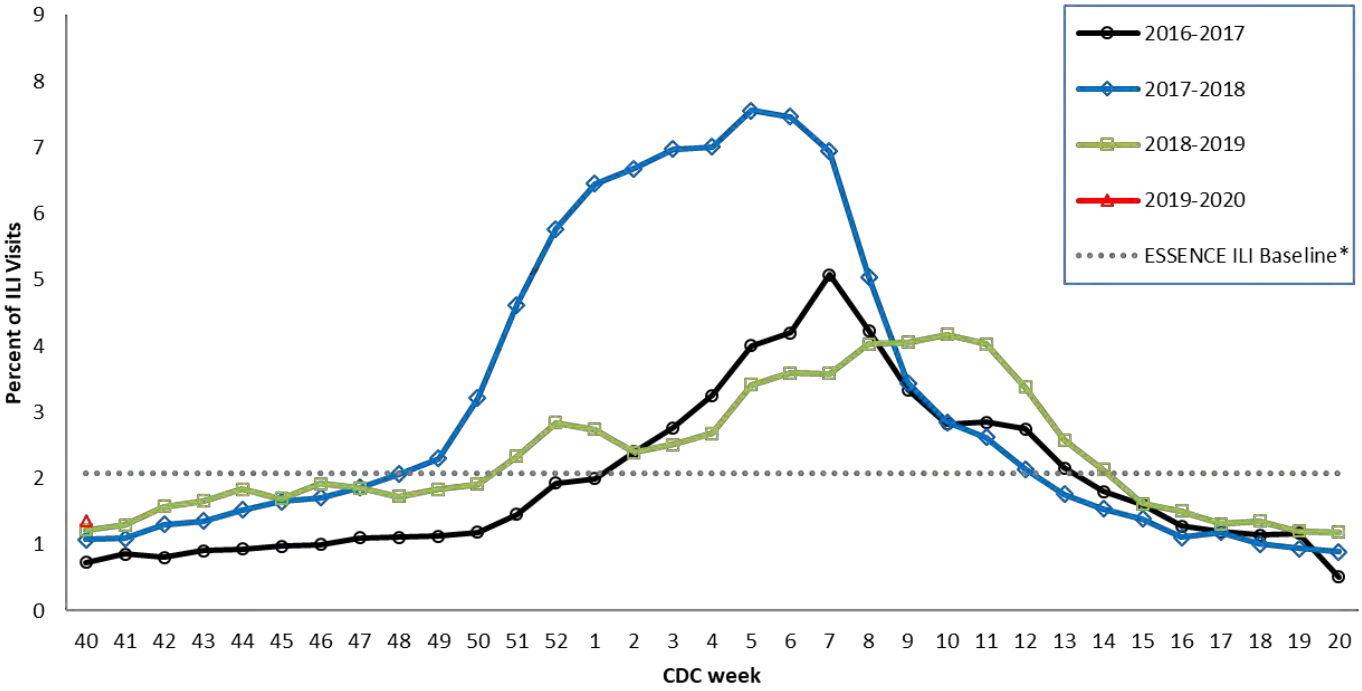
†2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).

Figure 6. Season-to-Date PCR (+) Tests for Influenza in Missouri



Data Source: National Respiratory and Enteric Virus Surveillance System (NREVSS), Centers for Disease Control and Prevention (CDC).
2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).

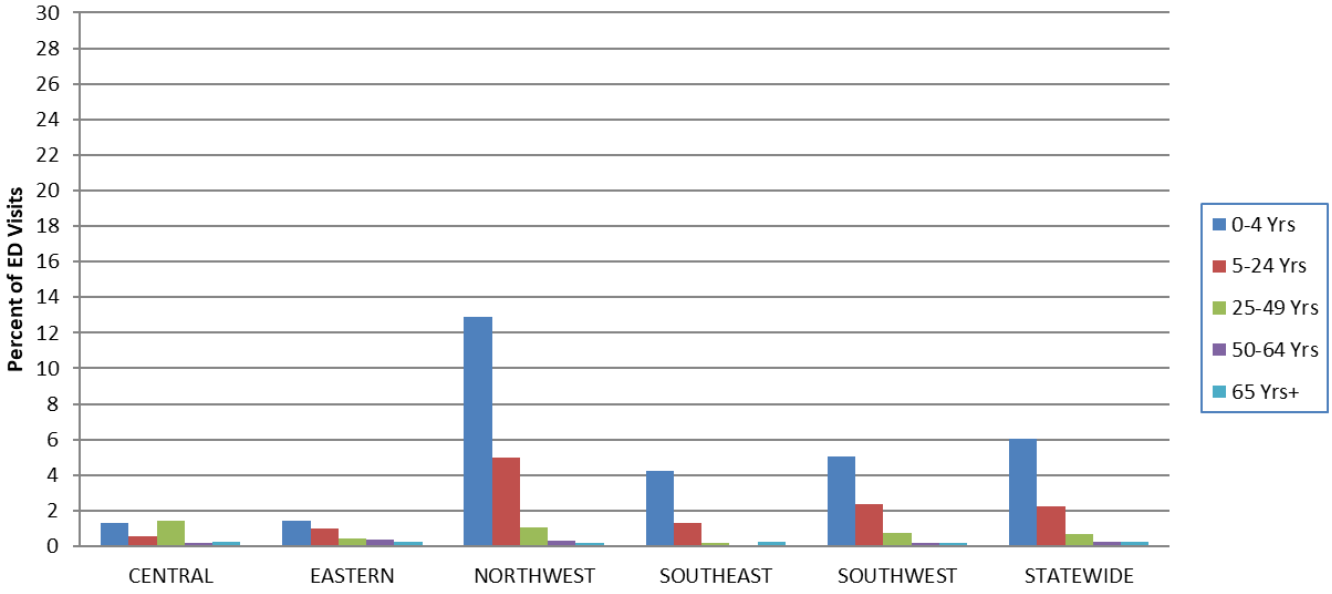
Figure 7. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, 2016-2020 Influenza Seasons*‡



*The ESSENCE ILI Baseline is the mean percent of ILI visits for each week during the previous three years (2016-18) when percentage of ILI visits were less than 2% of total visits, plus two standard deviations. Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.

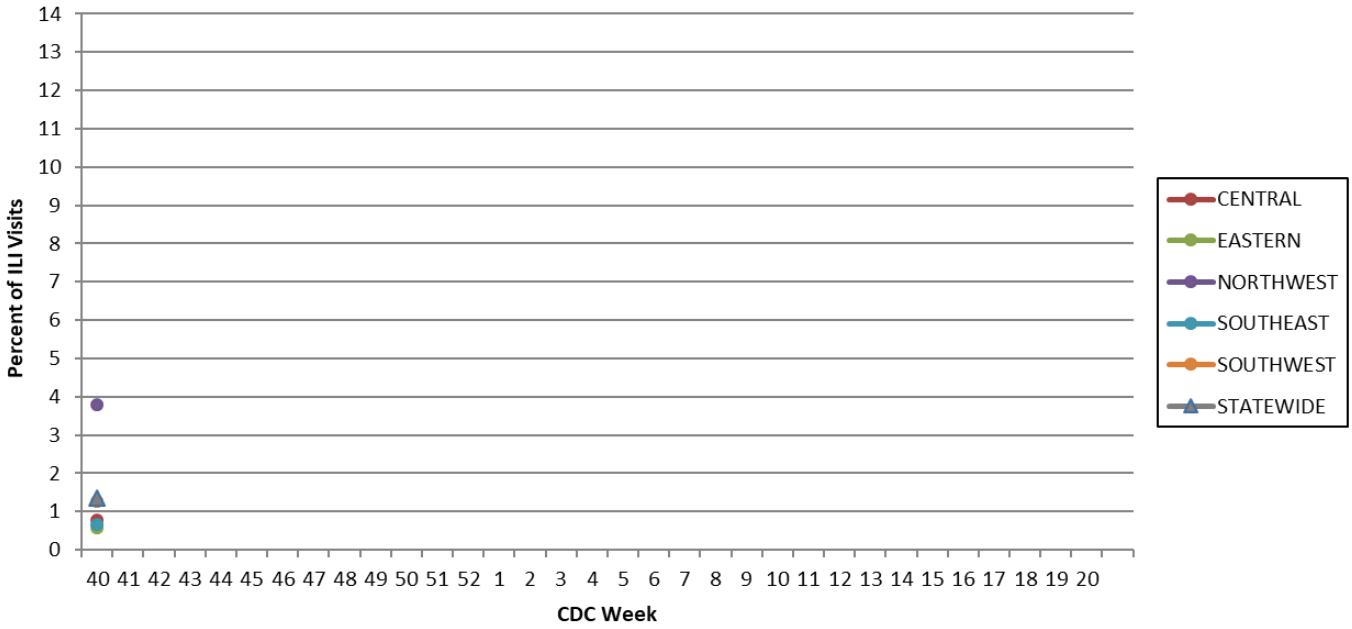
‡The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 8. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Age Group, Region and Statewide, Week 40, 2019*



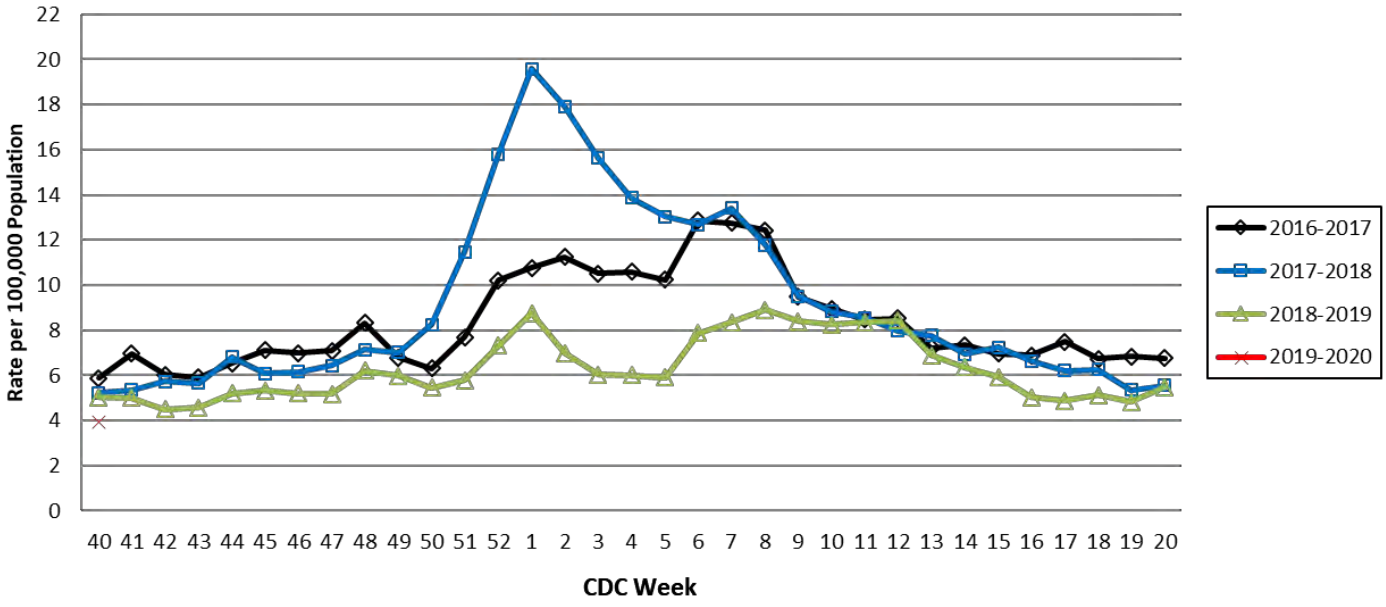
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 9. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Region and Statewide, 2019-2020 Influenza Season*



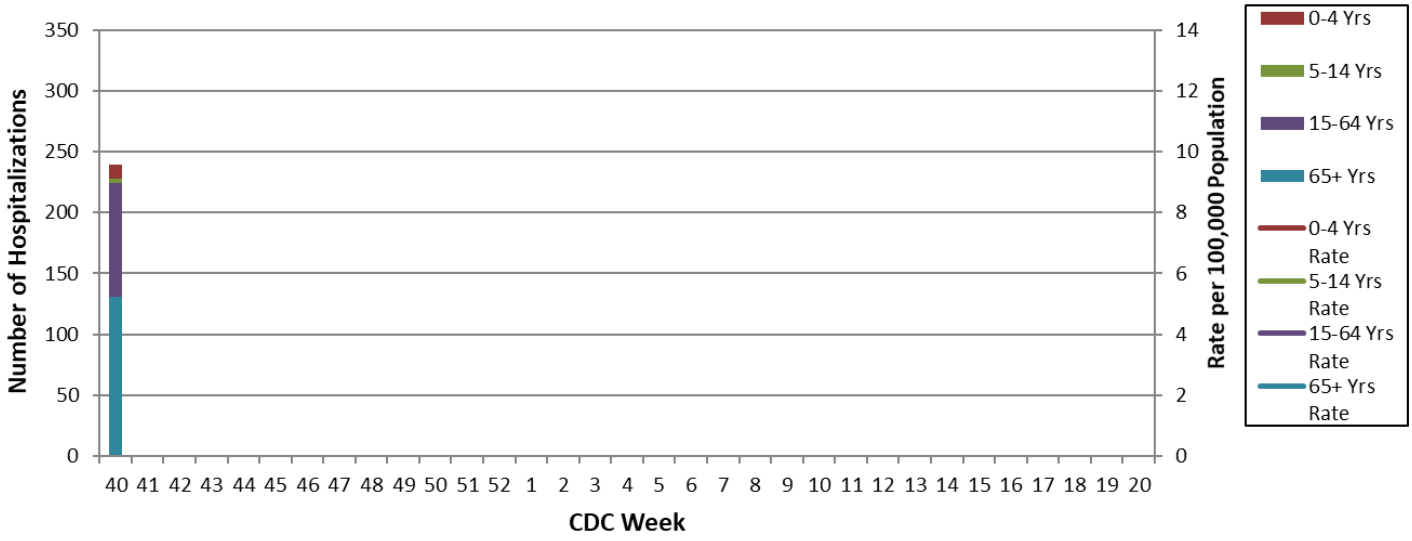
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 10. Weekly Rate of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Missouri Hospitals, 2016-2020 Influenza Seasons



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.
Population data from Missouri Census Data Center 2017 (https://census.missouri.edu).

Figure 11. Number of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Participating Missouri Hospitals, by Age Group, Week 40, 2019-2020 Influenza Season



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.

Additional Influenza Data Sources:

Centers for Disease Control and Prevention: National Influenza Surveillance (FluView):
http://www.cdc.gov/flu/weekly/fluactivitysurv.htm

The National Respiratory and Enteric Virus Surveillance System (NREVSS):
https://www.cdc.gov/surveillance/nrevss/

World Health Organization: International Influenza Surveillance:
http://www.who.int/influenza/surveillance_monitoring/en/

Missouri Weekly Influenza Surveillance Report
2019-2020 Influenza Season[1]

Week 41: October 6, 2019 – October 12, 2019

All data are preliminary and may change as more reports are received.

Summary:

- The estimated influenza activity in Missouri is Sporadic[2].

- During Week 41, a total of 60 laboratory-positive[3] influenza cases (30 influenza A, 29 influenza B and one untyped) were reported. A season-to-date total of 139 laboratory-positive influenza cases (72 influenza A, 66 influenza B, and one untyped) have been reported in Missouri as of Week 41. The influenza type for reported season-to-date cases includes 51.8% influenza, 47.5% influenza B, and 0.7% untyped. No laboratory-positive cases of influenza were reported by the Missouri State Public Health Laboratory (MSPHL) during Week 41. The percentage of respiratory specimens testing positive for influenza in Missouri laboratories reporting to the National Respiratory and Enteric Virus Surveillance System (NREVSS) remained low during Week 41 (Figure 6).

- Influenza-like illness (ILI) activity was above baseline the Missouri Outpatient ILI Surveillance Network (ILINet) and below baseline for the hospital emergency room visit chief complaint data reported through ESSENCE. The reported percentage of visits for ILI was 1.88% (Figure 5) and 1.61% (Figure 7) through ILINet and ESSENCE respectively.[4] The ILI data from a small number of sites located in the Northwest Region of the state is currently unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

- No influenza-associated deaths have been reported in Missouri as of Week 41.[5] During Week 40, 42 deaths involving Pneumonia and Influenza (P&I) were reported to the Bureau of Vital Records.

- No influenza or ILI-associated outbreaks or school closures have been reported in Missouri as of Week 41.

- Seasonal influenza activity remains low overall across the United States. National influenza surveillance information is prepared by CDC and is included in the weekly FluView report, which is available online at http://www.cdc.gov/flu/weekly/fluactivitysurv.htm.

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[1]The 2019-2020 influenza season begins CDC Week 40 (week ending October 5, 2019) and ends CDC Week 39 (week ending September 26, 2020).

[2]Sporadic is defined as: Small numbers of laboratory-confirmed influenza cases or a single laboratory-confirmed influenza outbreak has been reported, but there is no increase in cases of ILI.

[3]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.

[4]Influenza-like illness (ILI) is defined by ILINet as fever (temperature of 100ºF [37.8ºC] or greater) and a cough and/or a sore throat without a known cause other than influenza. ILI is defined by ESSENCE as Emergency Department chief complaints for Influenza or (FeverPlus and (Cough or SoreThroat) and not NonILIFevers).

[5]All influenza-associated deaths became reportable in Missouri in 2016.

Surveillance Data:

Interactive Maps

The jurisdiction-specific influenza data are provided though interactive maps available at http://bit.ly/moflu19. *Click on the jurisdiction to view the influenza data specific to that jurisdiction.*

- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, CDC Week 41**
- **Reported Week-specific Rate per 100,000 Population, CDC Week 41**
- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, Season-to-Date**
- **Reported Rate per 100,000 Population, Season-to-Date**

Data Figures

Figure 1. Number of Laboratory-positive† Influenza Cases by Influenza Type, Missouri, CDC Week 41 (October 6, 2019 - October 12, 2019)*

Influenza Type	Week 40	Week 41	2019-2020* Season-to-Date
Influenza A	42	30	72
Influenza B	37	29	66
Influenza Unknown Or Untyped	0	0	0
Total	79	60	139

†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv).

Figure 2. Number of Laboratory-positive† Influenza Cases and Case Rates by Age Group, Missouri, CDC Week 41 (October 6, 2019 - October 12, 2019)*‡

Age Group	Week 41 Cases	Week 41 Rate‡	2019-2020* Season-to-Date	2019-2020* Season-to-Date Rate‡
00-04	14	3.74	29	7.75
05-24	22	1.37	45	2.80
25-49	15	0.78	30	1.57
50-64	4	0.32	14	1.13
65+	5	0.52	21	2.20
Total	60	0.99	139	2.28

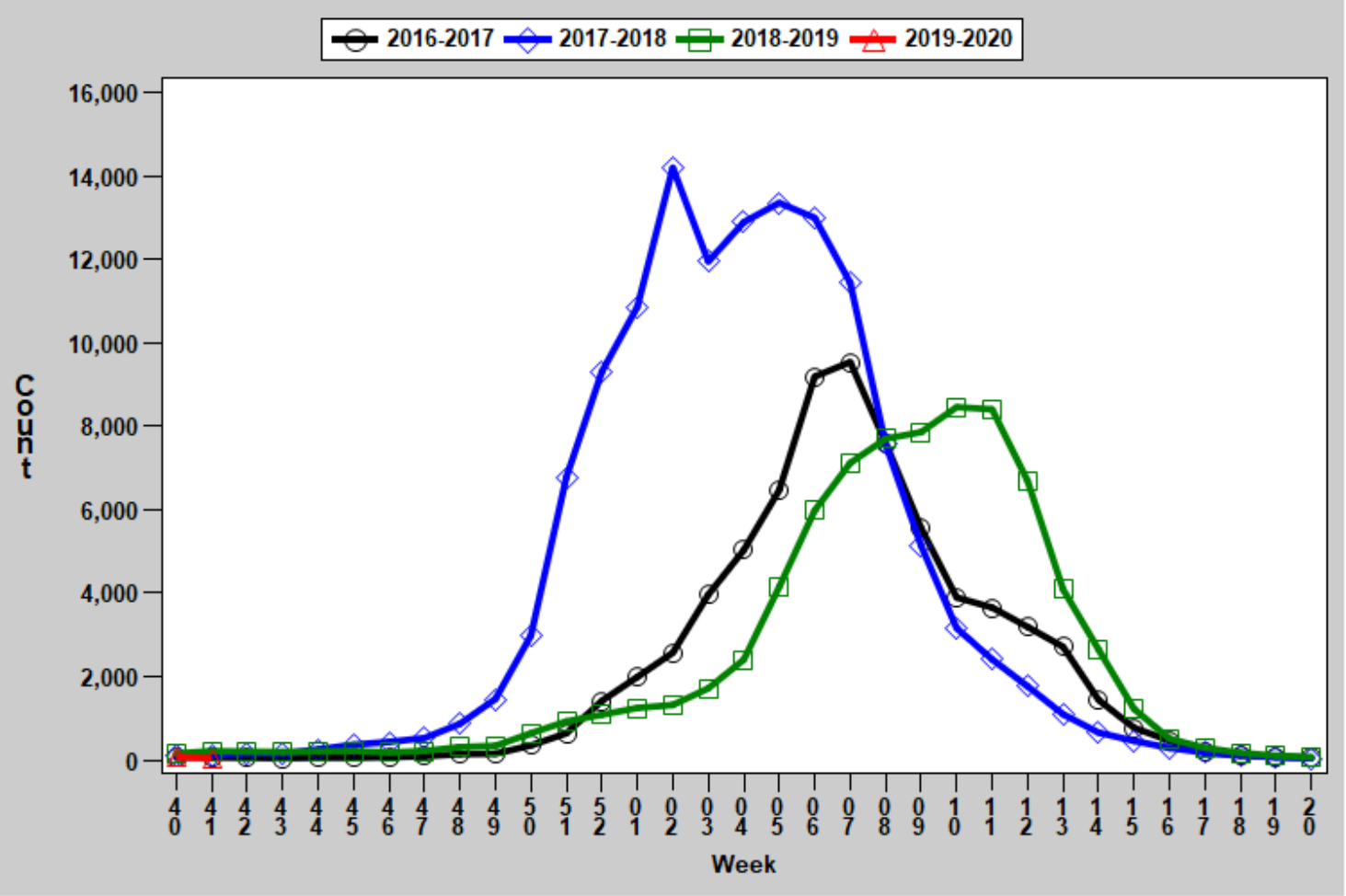
†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
‡Incidence Rate per 100,000 population

Figure 3. Number of Laboratory-positive[†] Influenza Cases and Case Rates by Region, Missouri, CDC Week 41 (October 6, 2019 - October 12, 2019)[*‡]

Region	Week 41 Cases	Week 41 Rate[‡]	2019-2020* Season-to-Date	2019-2020* Season-to-Date Rate[‡]
Central	18	2.66	31	4.58
Eastern	15	0.66	33	1.46
Northwest	6	0.38	14	0.88
Southeast	7	1.48	31	6.57
Southwest	14	1.31	30	2.80
Total	60	0.99	139	2.28

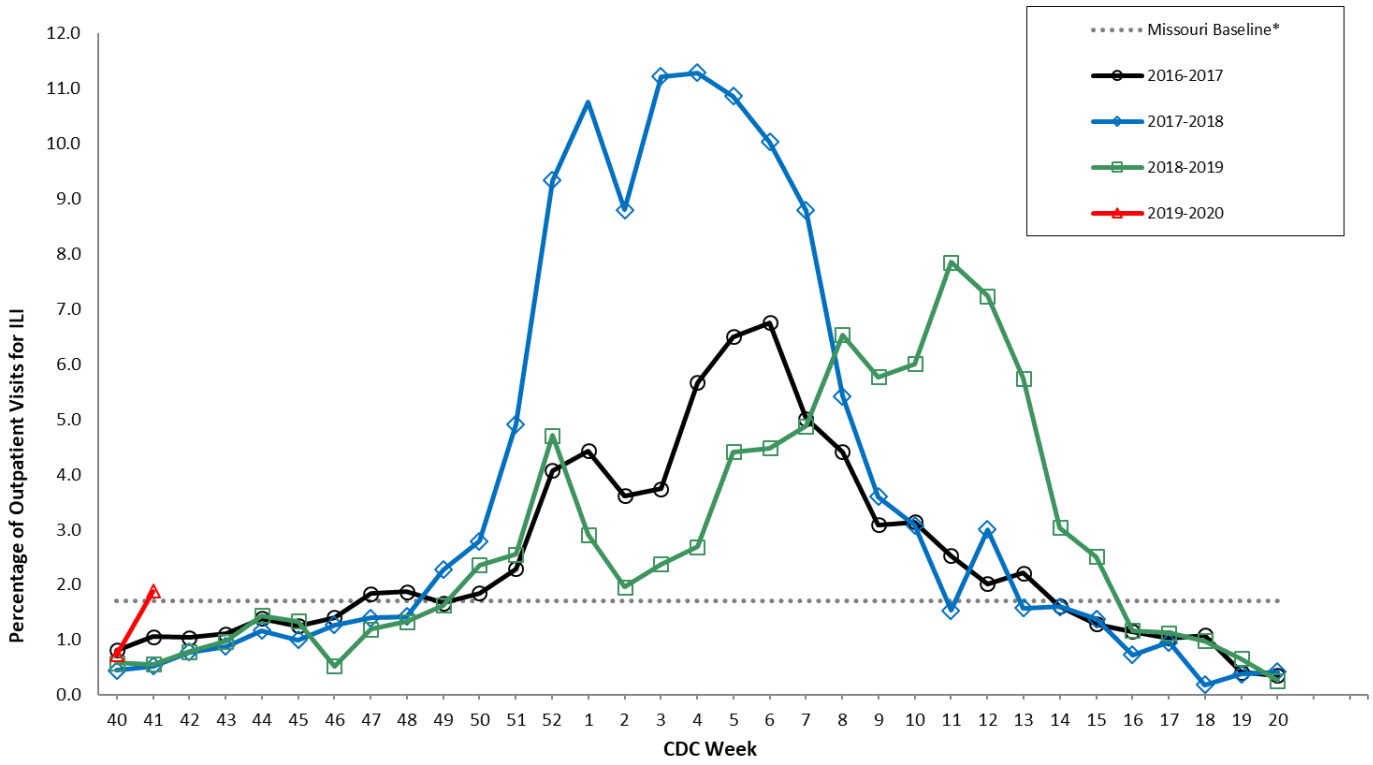
[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
[‡]Incidence Rate per 100,000 population

Figure 4. Number of Laboratory-positive[†] Influenza Cases by CDC Week, Missouri, 2016-2020[*]



[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).Data Source: Missouri Health Information Surveillance System (WebSurv).

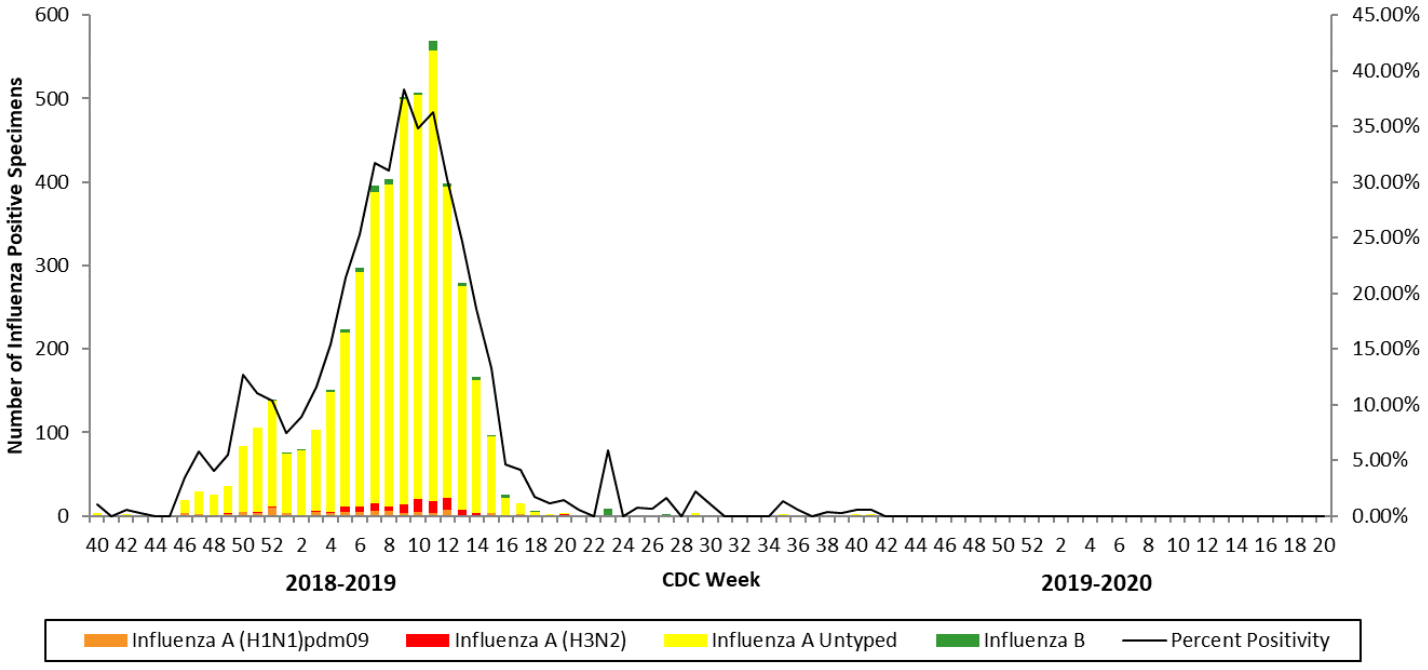
Figure 5. Percentage of Outpatient Visits for Influenza-like Illness (ILI), Missouri Outpatient ILI Surveillance Network (ILINet) 2016-2020*†



*The ILINet Region 7 (MO, IA, KS, NE) baseline is the mean percentage of patient visits for ILI during non-influenza weeks for the previous three seasons, plus two standard deviations. A non-influenza week is defined as periods of two or more consecutive weeks in which each week accounted for less than 2% of the season's total number of specimens that tested positive for influenza. Data Source: U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Centers for Disease Control and Prevention (CDC).

†2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).

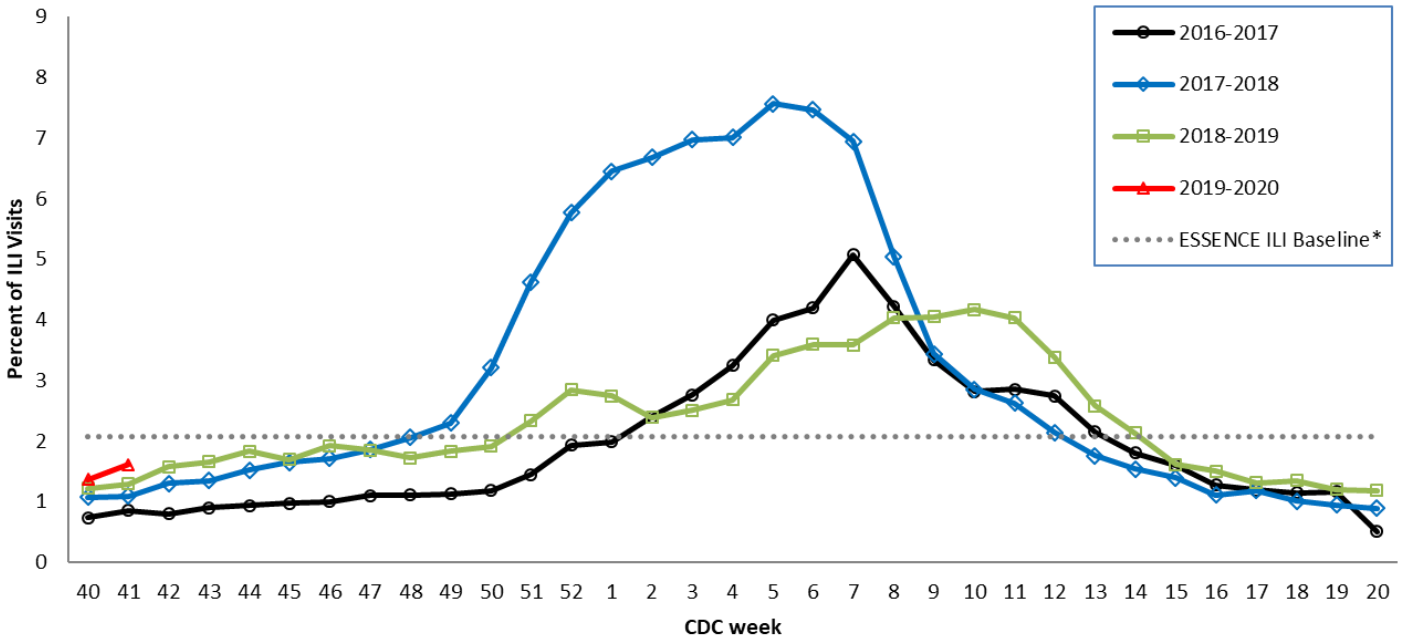
Figure 6. Season-to-Date PCR (+) Tests for Influenza in Missouri



Data Source: National Respiratory and Enteric Virus Surveillance System (NREVSS), Centers for Disease Control and Prevention (CDC).

2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).

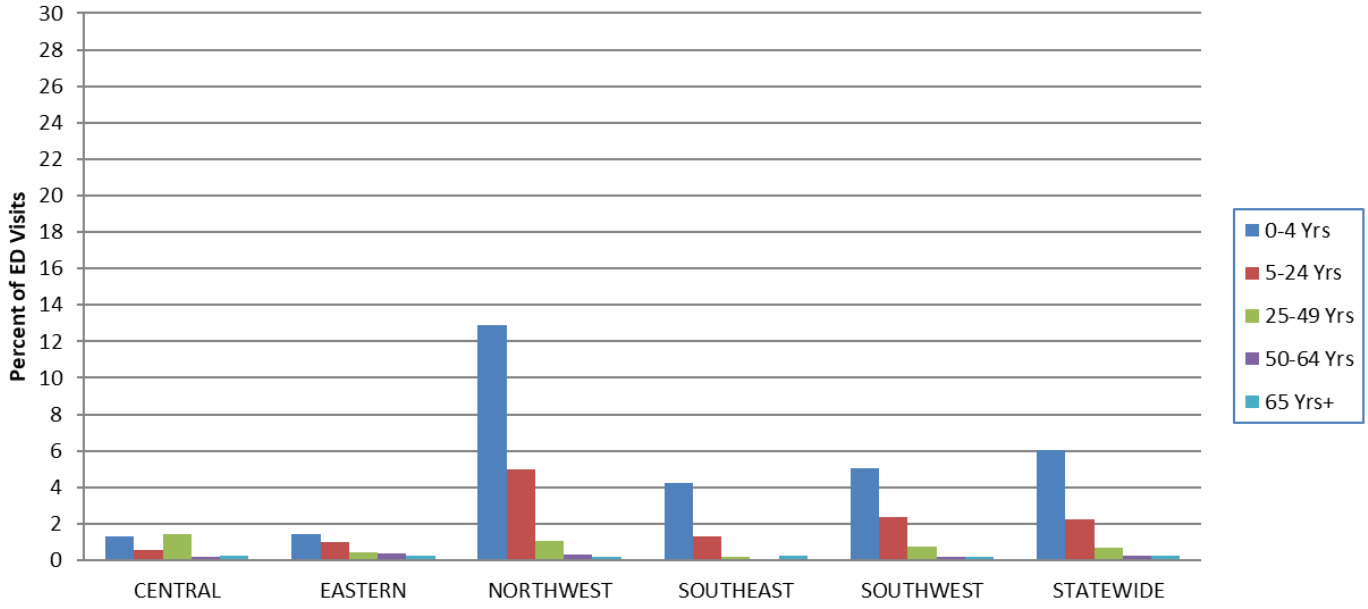
Figure 7. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, 2016-2020 Influenza Seasons*‡



*The ESSENCE ILI Baseline is the mean percent of ILI visits for each week during the previous three years (2016-18) when percentage of ILI visits were less than 2% of total visits, plus two standard deviations. Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.

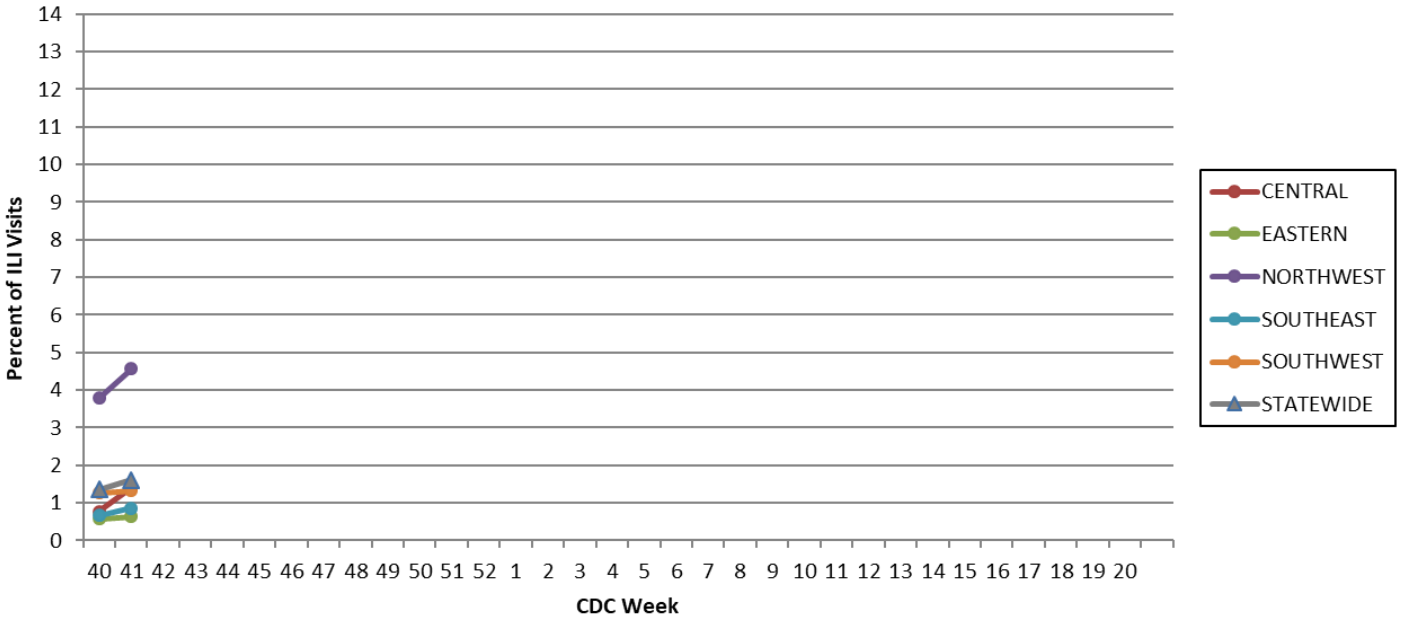
‡The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 8. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Age Group, Region and Statewide, Week 41, 2019*



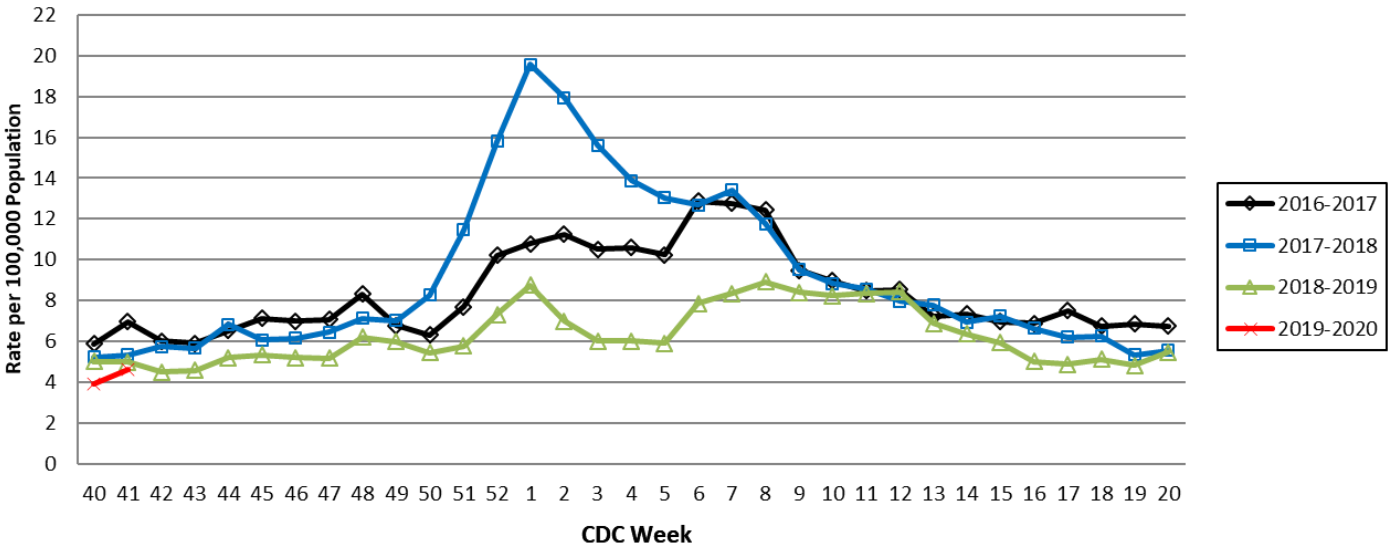
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 9. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Region and Statewide, 2019-2020 Influenza Season*



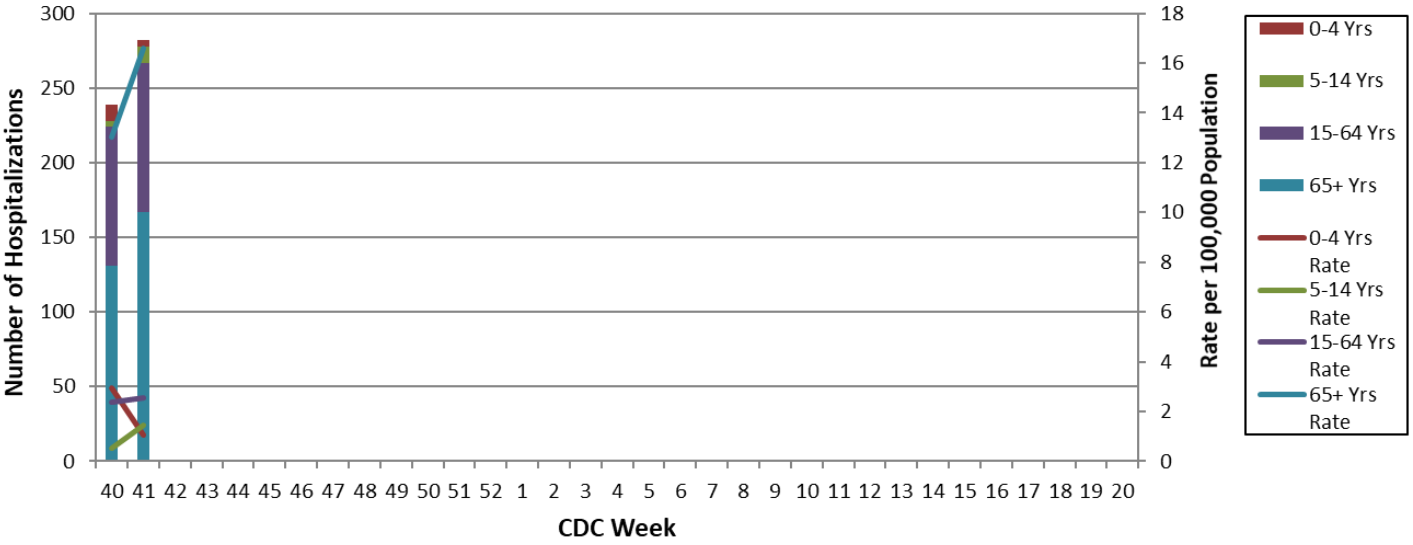
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 10. Weekly Rate of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Missouri Hospitals, 2016-2020 Influenza Seasons



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.
Population data from Missouri Census Data Center 2017 (https://census.missouri.edu).

Figure 11. Number of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Participating Missouri Hospitals, by Age Group, Week 41, 2019-2020 Influenza Season



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.

Additional Influenza Data Sources:

Centers for Disease Control and Prevention: National Influenza Surveillance (FluView):
http://www.cdc.gov/flu/weekly/fluactivitysurv.htm

The National Respiratory and Enteric Virus Surveillance System (NREVSS):
https://www.cdc.gov/surveillance/nrevss/

World Health Organization: International Influenza Surveillance:
http://www.who.int/influenza/surveillance_monitoring/en/

Missouri Weekly Influenza Surveillance Report 2019-2020 Influenza Season[1]

Week 42: October 13, 2019 – October 19, 2019

All data are preliminary and may change as more reports are received.

Summary:

- The estimated influenza activity in Missouri is Sporadic[2].
- During Week 42, a total of 90 laboratory-positive[3] influenza cases (45 influenza A, 43 influenza B and two untyped) were reported. A season-to-date total of 276 laboratory-positive influenza cases (141 influenza A, 132 influenza B, and three untyped) have been reported in Missouri as of Week 42. The influenza type for reported season-to-date cases includes 51% influenza, 48% influenza B, and 1% untyped. No laboratory-positive cases of influenza were reported by the Missouri State Public Health Laboratory (MSPHL) during Week 42. The percentage of respiratory specimens testing positive for influenza in Missouri laboratories reporting to the National Respiratory and Enteric Virus Surveillance System (NREVSS) remained low during Week 42 (Figure 6).
- Influenza-like illness (ILI) activity was above baseline the Missouri Outpatient ILI Surveillance Network (ILINet) and at baseline for the hospital emergency room visit chief complaint data reported through ESSENCE. The reported percentage of visits for ILI was 2.42% (Figure 5) and 2.07% (Figure 7) through ILINet and ESSENCE respectively.[4] The ILI data from a small number of sites located in the Northwest Region of the state is currently unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.
- No influenza-associated deaths have been reported in Missouri as of Week 42.[5] During Week 41, 39 deaths involving Pneumonia and Influenza (P&I) were reported to the Bureau of Vital Records.
- No influenza or ILI-associated outbreaks or school closures have been reported in Missouri as of Week 42.
- Seasonal influenza activity remains low in the United States. National influenza surveillance information is prepared by CDC and is included in the weekly FluView report, which is available online at http://www.cdc.gov/flu/weekly/fluactivitysurv.htm.

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[1]The 2019-2020 influenza season begins CDC Week 40 (week ending October 5, 2019) and ends CDC Week 39 (week ending September 26, 2020).

[2]Sporadic is defined as: Small numbers of laboratory-confirmed influenza cases or a single laboratory-confirmed influenza outbreak has been reported, but there is no increase in cases of ILI.

[3]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.

[4]Influenza-like illness (ILI) is defined by ILINet as fever (temperature of 100ºF [37.8ºC] or greater) and a cough and/or a sore throat without a known cause other than influenza. ILI is defined by ESSENCE as Emergency Department chief complaints for Influenza or (FeverPlus and (Cough or SoreThroat) and not NonILIFevers).

[5]All influenza-associated deaths became reportable in Missouri in 2016.

Surveillance Data:

Interactive Maps

The jurisdiction-specific influenza data are provided though interactive maps available at http://bit.ly/moflu19. *Click on the jurisdiction to view the influenza data specific to that jurisdiction.*

- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, CDC Week 42**
- **Reported Week-specific Rate per 100,000 Population, CDC Week 42**
- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, Season-to-Date**
- **Reported Rate per 100,000 Population, Season-to-Date**

Data Figures

Figure 1. Number of Laboratory-positive† Influenza Cases by Influenza Type, Missouri, CDC Week 42 (October 13, 2019 - October 19, 2019)*

Influenza Type	Week 40	Week 41	Week 42	2019-2020* Season-to-Date
Influenza A	47	49	45	141
Influenza B	41	48	43	132
Influenza Unknown Or Untyped	0	1	2	3
Total	88	98	90	276

†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv).

Figure 2. Number of Laboratory-positive† Influenza Cases and Case Rates by Age Group, Missouri, CDC Week 42 (October 13, 2019 - October 19, 2019)*‡

Age Group	Week 42 Cases	Week 42 Rate‡	2019-2020* Season-to-Date	2019-2020* Season-to-Date Rate‡
00-04	17	4.54	52	13.89
05-24	28	1.75	88	5.48
25-49	18	0.94	58	3.03
50-64	19	1.54	39	3.15
65+	8	0.84	39	4.08
Total	90	1.48	276	4.54

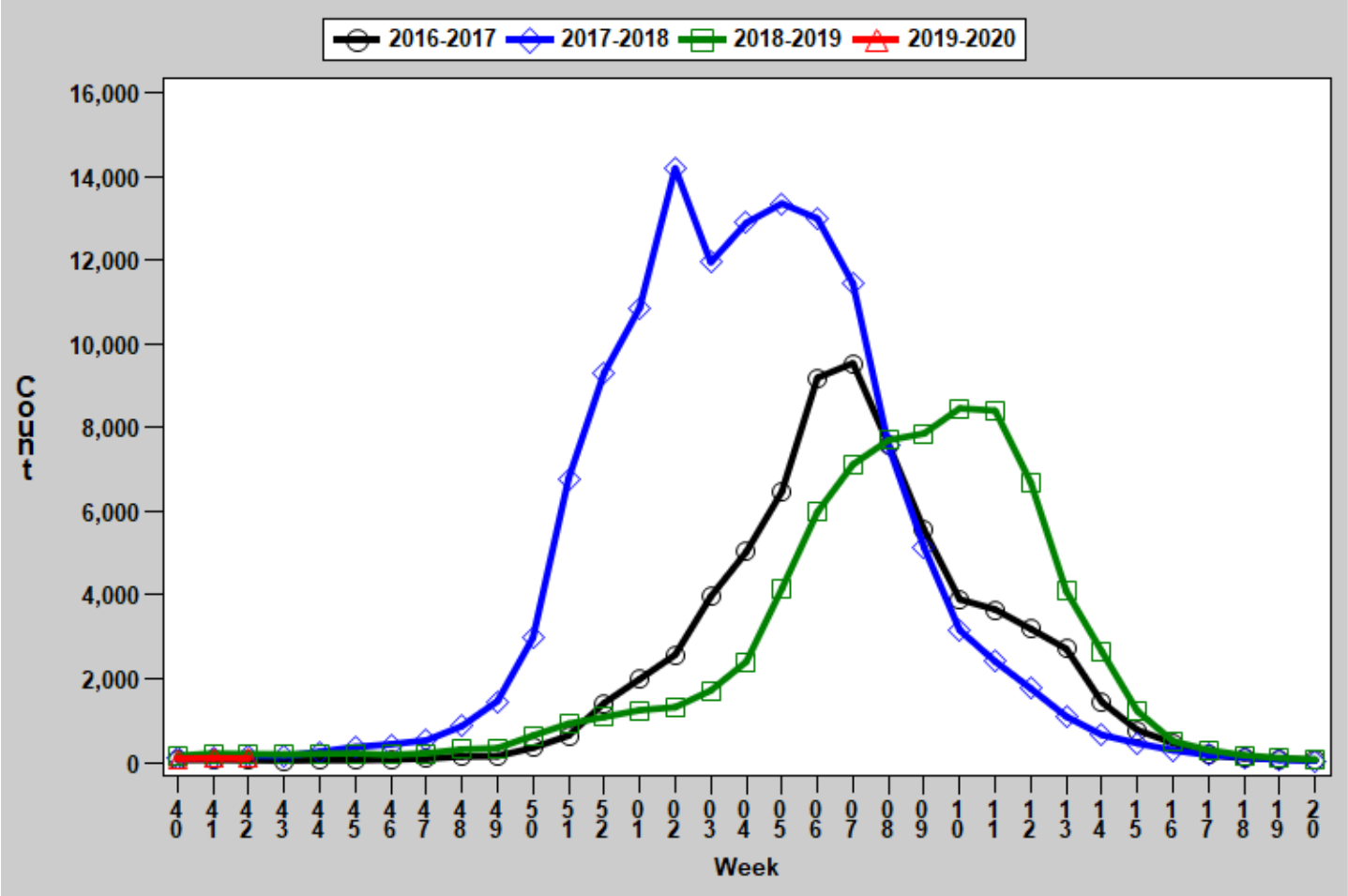
†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
‡Incidence Rate per 100,000 population

Figure 3. Number of Laboratory-positive[†] Influenza Cases and Case Rates by Region, Missouri, CDC Week 42 (October 13, 2019 - October 19, 2019)[*‡]

Region	Week 42 Cases	Week 42 Rate[‡]	2019-2020* Season-to-Date	2019-2020* Season-to-Date Rate[‡]
Central	11	1.62	50	7.39
Eastern	27	1.19	80	3.53
Northwest	5	0.31	25	1.56
Southeast	22	4.66	63	13.36
Southwest	25	2.33	58	5.41
Total	90	1.48	276	4.54

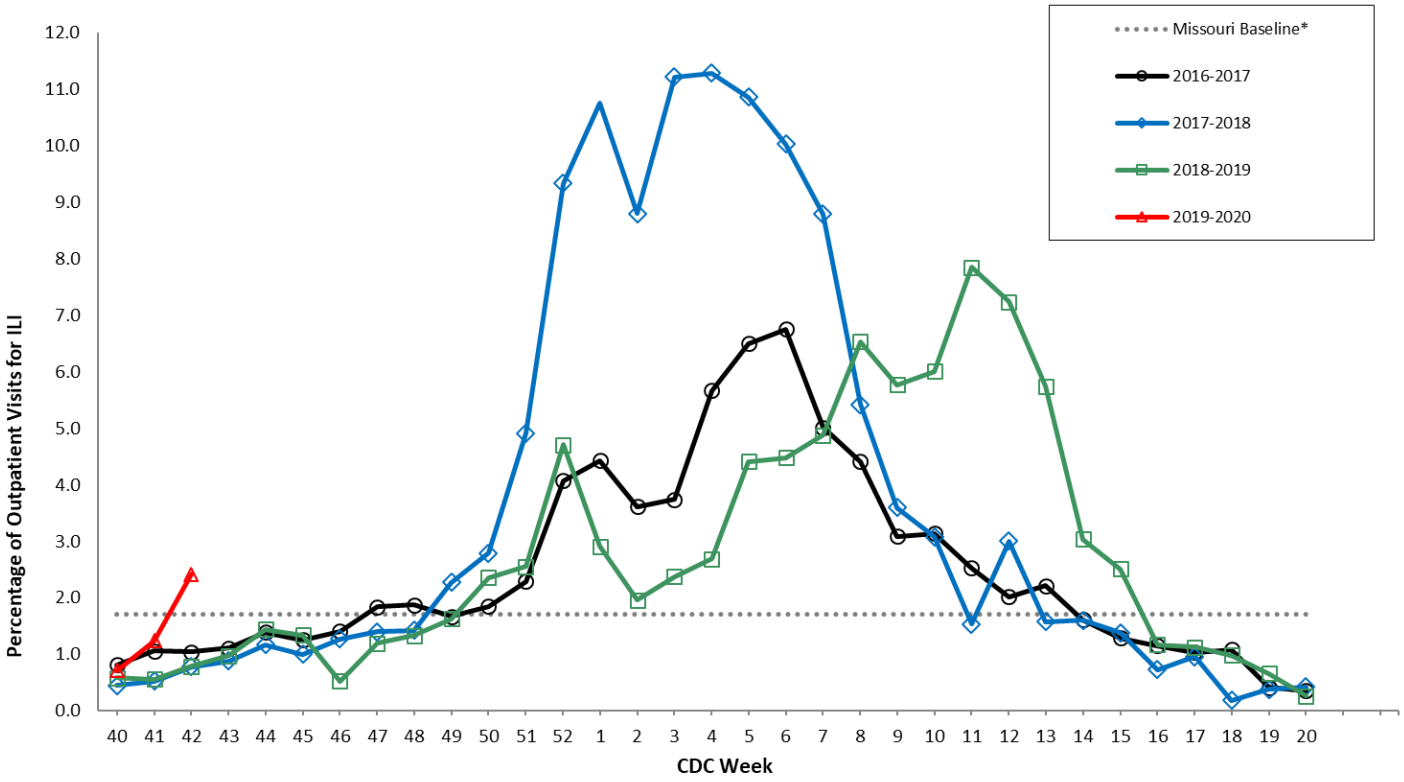
[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
[‡]Incidence Rate per 100,000 population

Figure 4. Number of Laboratory-positive[†] Influenza Cases by CDC Week, Missouri, 2016-2020[*]



[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).Data Source: Missouri Health Information Surveillance System (WebSurv).

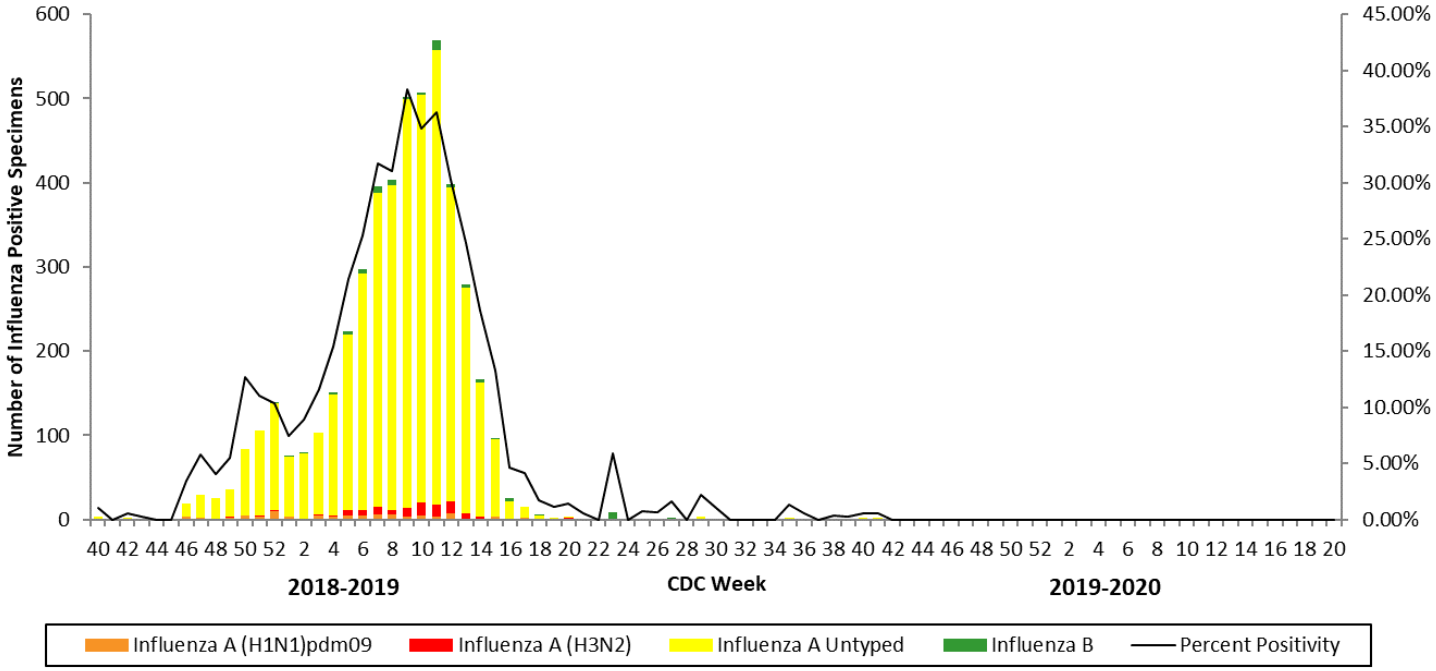
Figure 5. Percentage of Outpatient Visits for Influenza-like Illness (ILI), Missouri Outpatient ILI Surveillance Network (ILINet) 2016-2020*†



*The ILINet Region 7 (MO, IA, KS, NE) baseline is the mean percentage of patient visits for ILI during non-influenza weeks for the previous three seasons, plus two standard deviations. A non-influenza week is defined as periods of two or more consecutive weeks in which each week accounted for less than 2% of the season's total number of specimens that tested positive for influenza. Data Source: U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Centers for Disease Control and Prevention (CDC).

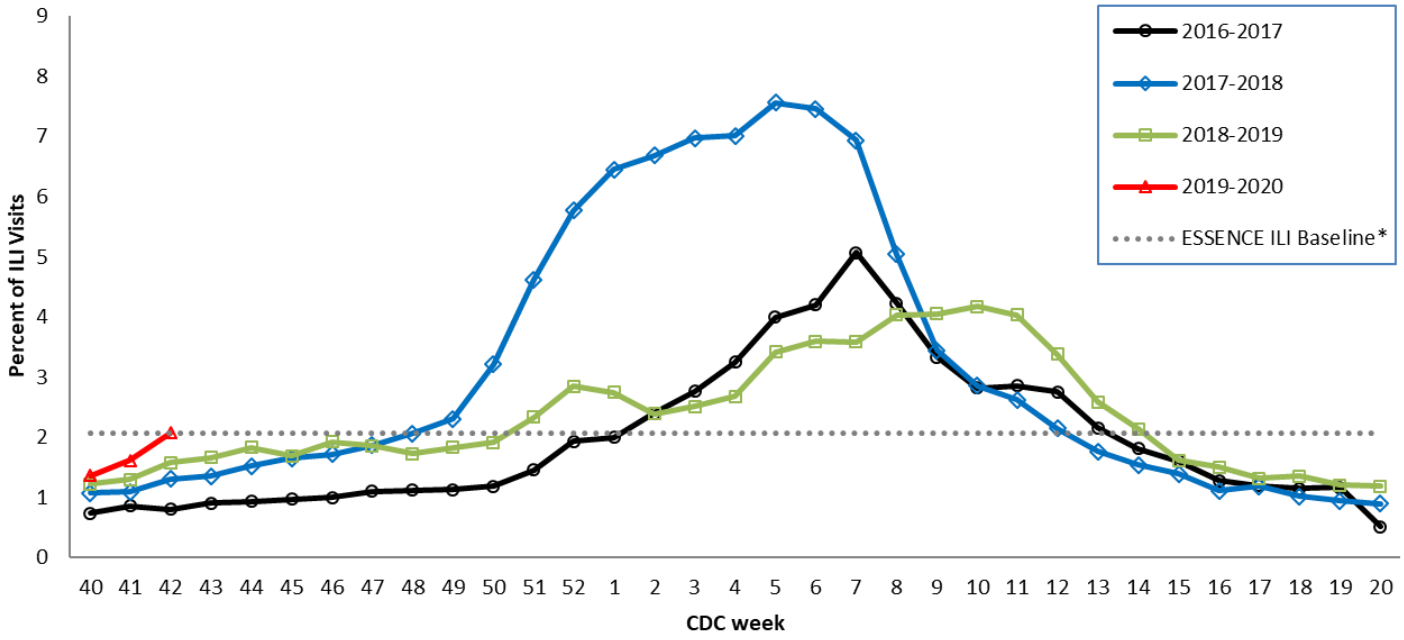
†2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).

Figure 6. Season-to-Date PCR (+) Tests for Influenza in Missouri



Data Source: National Respiratory and Enteric Virus Surveillance System (NREVSS), Centers for Disease Control and Prevention (CDC).
2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).

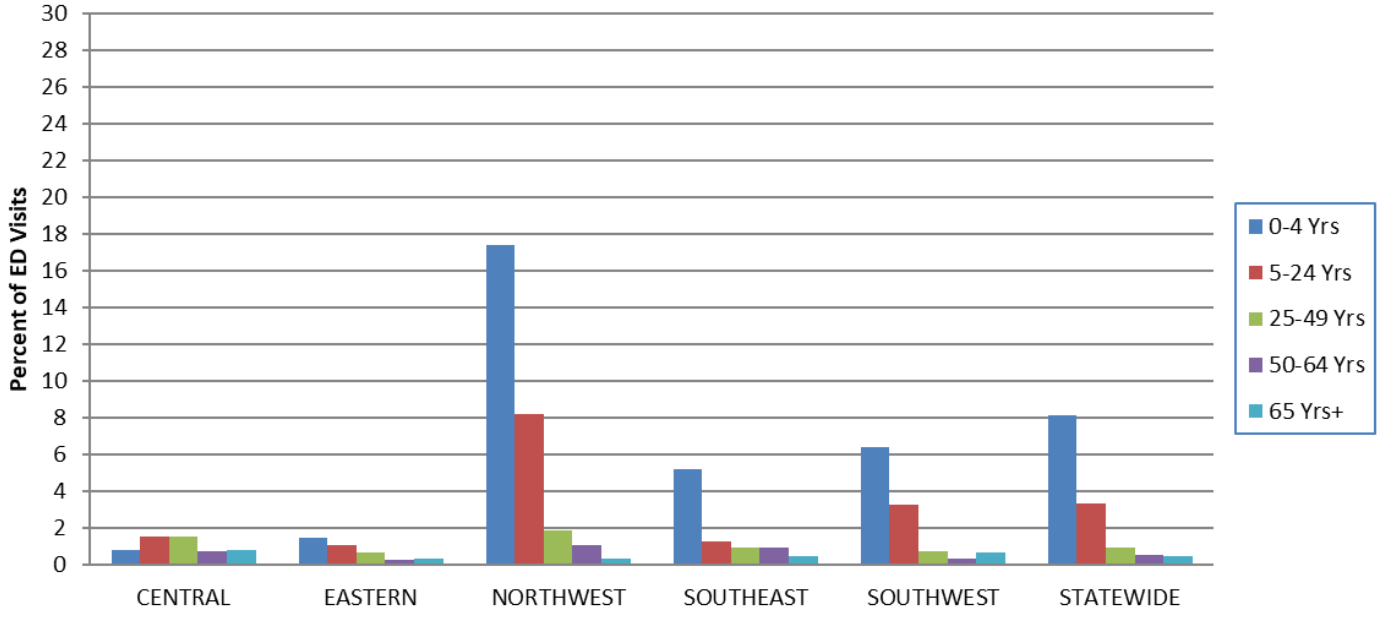
Figure 7. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, 2016-2020 Influenza Seasons*‡



*The ESSENCE ILI Baseline is the mean percent of ILI visits for each week during the previous three years (2016-18) when percentage of ILI visits were less than 2% of total visits, plus two standard deviations. Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.

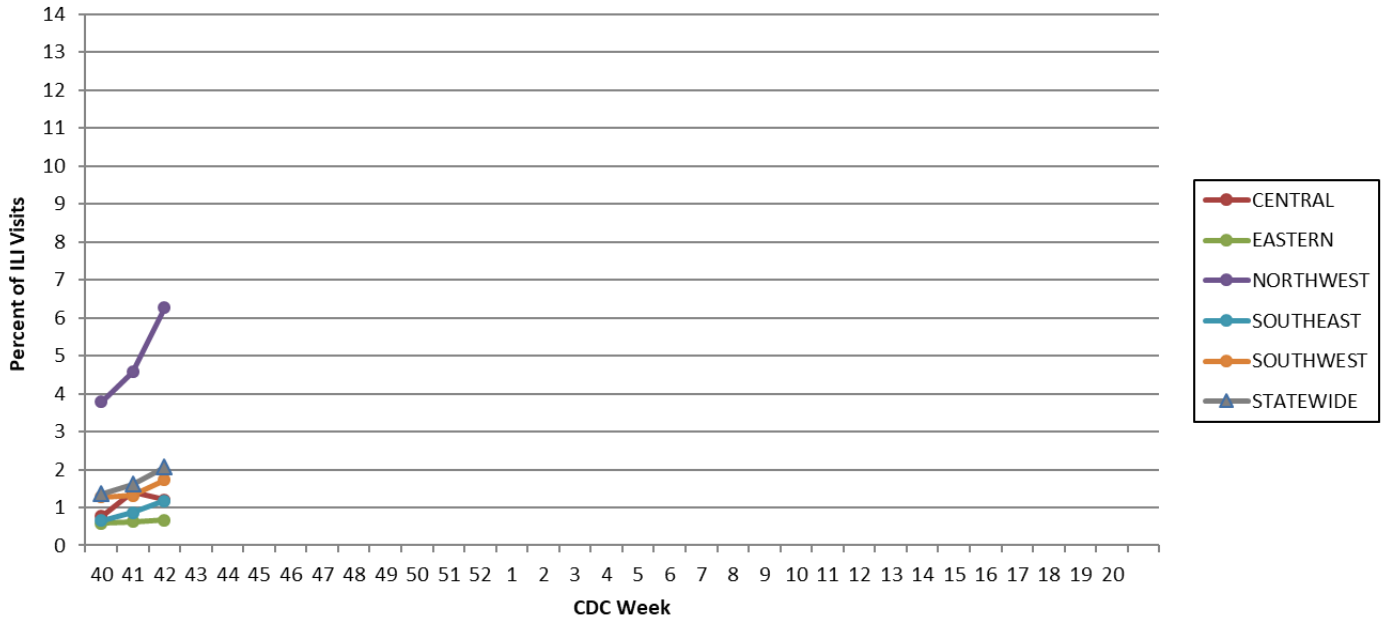
‡The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 8. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Age Group, Region and Statewide, Week 42, 2019*



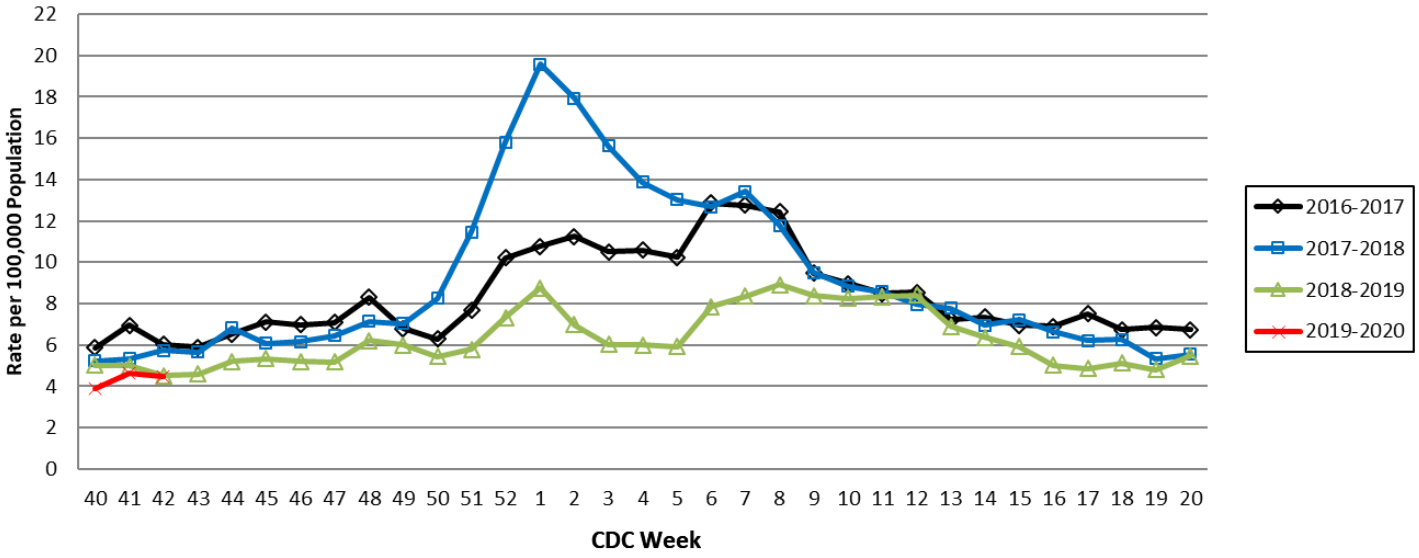
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 9. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Region and Statewide, 2019-2020 Influenza Season*



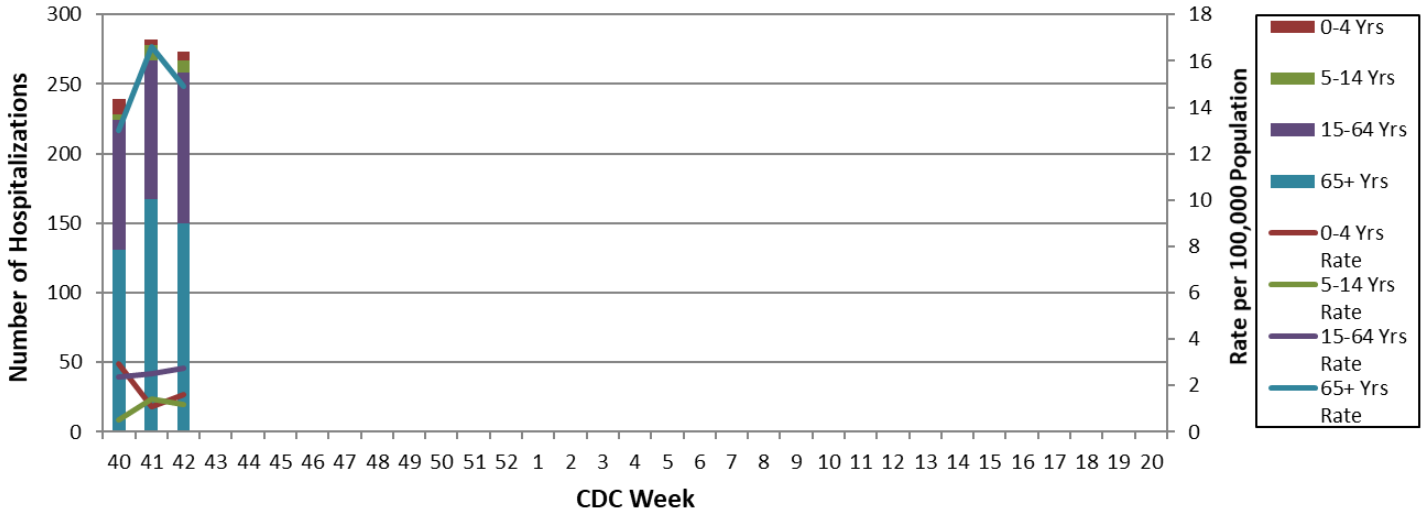
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 10. Weekly Rate of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Missouri Hospitals, 2016-2020 Influenza Seasons



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.
Population data from Missouri Census Data Center 2017 (https://census.missouri.edu).

Figure 11. Number of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Participating Missouri Hospitals, by Age Group, Week 42, 2019-2020 Influenza Season



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.

Additional Influenza Data Sources:

Centers for Disease Control and Prevention: National Influenza Surveillance (FluView):
http://www.cdc.gov/flu/weekly/fluactivitysurv.htm

The National Respiratory and Enteric Virus Surveillance System (NREVSS):
https://www.cdc.gov/surveillance/nrevss/

World Health Organization: International Influenza Surveillance:
http://www.who.int/influenza/surveillance_monitoring/en/

Missouri Weekly Influenza Surveillance Report
2019-2020 Influenza Season[1]

Week 43: October 20, 2019 – October 26, 2019

All data are preliminary and may change as more reports are received.

Summary:

- The estimated influenza activity in Missouri is Sporadic[2].

- During Week 43, a total of 90 laboratory-positive[3] influenza cases (48 influenza A and 42 influenza B) were reported. A season-to-date total of 399 laboratory-positive influenza cases (210 influenza A, 186 influenza B, and three untyped) have been reported in Missouri as of Week 43. The influenza type for reported season-to-date cases includes 52.6% influenza, 46.6% influenza B, and 0.8% untyped. No laboratory-positive cases of influenza were reported by the Missouri State Public Health Laboratory (MSPHL) during Week 43. The percentage of respiratory specimens testing positive for influenza in Missouri laboratories reporting to the National Respiratory and Enteric Virus Surveillance System (NREVSS) remained low during Week 43 (Figure 6).

- Influenza-like illness (ILI) activity was above baseline the Missouri Outpatient ILI Surveillance Network (ILINet) and below baseline for the hospital emergency room visit chief complaint data reported through ESSENCE. The reported percentage of visits for ILI was 1.89% (Figure 5) and 1.98% (Figure 7) through ILINet and ESSENCE respectively.[4] The ILI data from a small number of sites located in the Northwest Region of the state is currently unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

- No influenza-associated deaths have been reported in Missouri as of Week 43.[5]During Week 42, 35 deaths involving Pneumonia and Influenza (P&I) were reported to the Bureau of Vital Records.

- No influenza or ILI-associated outbreaks or school closures have been reported in Missouri as of Week 43.

- Seasonal influenza activity increased slightly in the United States. National influenza surveillance information is prepared by CDC and is included in the weekly FluView report, which is available online at http://www.cdc.gov/flu/weekly/fluactivitysurv.htm.

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[1]The 2019-2020 influenza season begins CDC Week 40 (week ending October 5, 2019) and ends CDC Week 39 (week ending September 26, 2020).

[2]Sporadic is defined as: Small numbers of laboratory-confirmed influenza cases or a single laboratory-confirmed influenza outbreak has been reported, but there is no increase in cases of ILI.

[3]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.

[4]Influenza-like illness (ILI) is defined by ILINet as fever (temperature of 100ºF [37.8ºC] or greater) and a cough and/or a sore throat without a known cause other than influenza. ILI is defined by ESSENCE as Emergency Department chief complaints for Influenza or (FeverPlus and (Cough or SoreThroat) and not NonILIFevers).

[5]All influenza-associated deaths became reportable in Missouri in 2016.

Surveillance Data:

Interactive Maps

The jurisdiction-specific influenza data are provided though interactive maps available at http://bit.ly/moflu19. *Click on the jurisdiction to view the influenza data specific to that jurisdiction.*

- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, CDC Week 43**
- **Reported Week-specific Rate per 100,000 Population, CDC Week 43**
- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, Season-to-Date**
- **Reported Rate per 100,000 Population, Season-to-Date**

Data Figures

Figure 1. Number of Laboratory-positive† Influenza Cases by Influenza Type, Missouri, CDC Week 43 (October 20, 2019 - October 26, 2019)*

Influenza Type	Week 41	Week 42	Week 43	2019-2020* Season-to-Date
Influenza A	53	61	48	210
Influenza B	52	47	42	186
Influenza Unknown Or Untyped	1	2	0	3
Total	106	110	90	399

†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv).

Figure 2. Number of Laboratory-positive† Influenza Cases and Case Rates by Age Group, Missouri, CDC Week 43 (October 20, 2019 - October 26, 2019)*‡

Age Group	Week 43 Cases	Week 43 Rate‡	2019-2020* Season-to-Date	2019-2020* Season-to-Date Rate‡
00-04	22	5.88	77	20.57
05-24	23	1.43	116	7.23
25-49	22	1.15	93	4.86
50-64	13	1.05	60	4.85
65+	10	1.05	53	5.55
Total	90	1.48	399	6.56

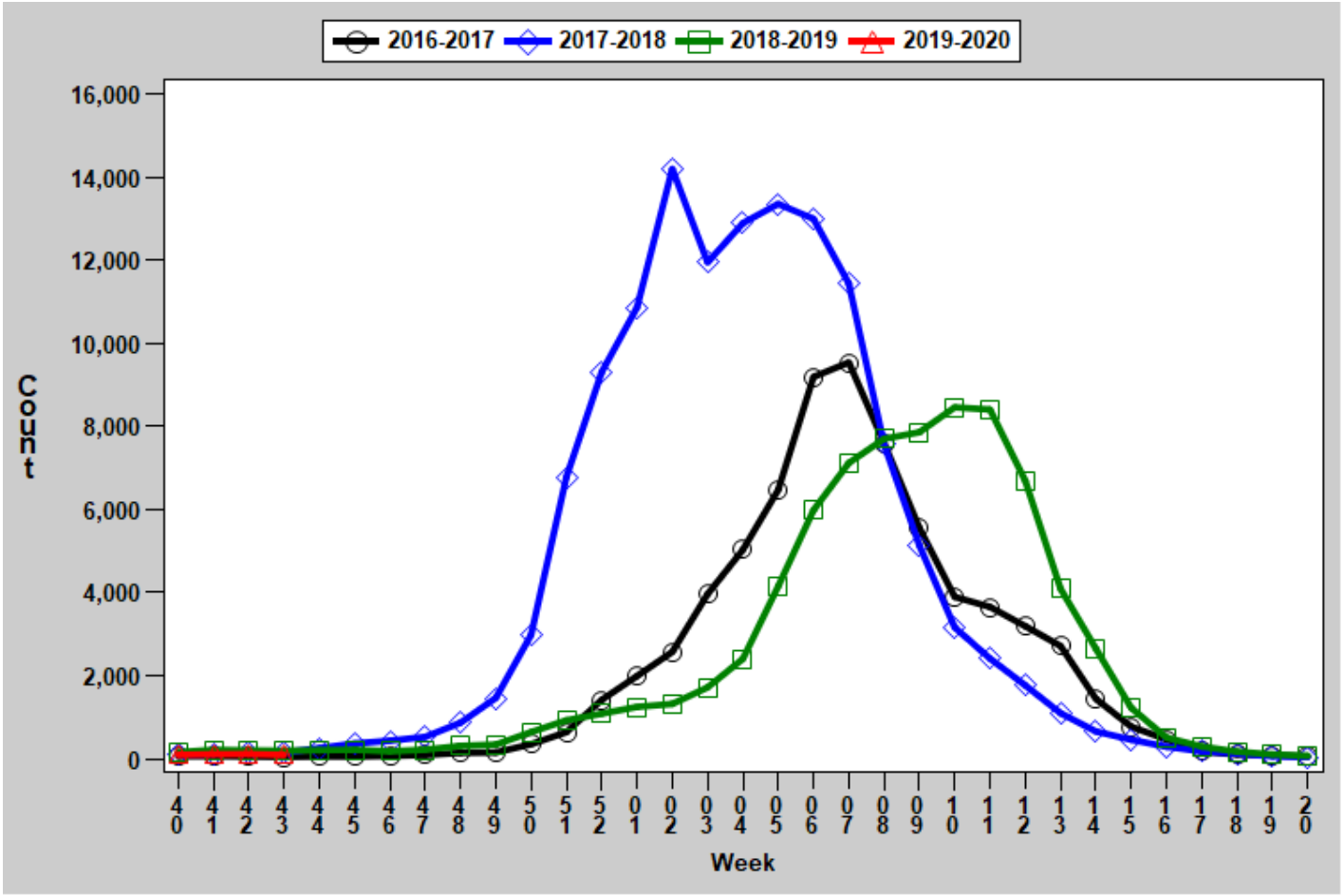
†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
‡Incidence Rate per 100,000 population

Figure 3. Number of Laboratory-positive[†] Influenza Cases and Case Rates by Region, Missouri, CDC Week 43 (October 20, 2019 - October 26, 2019)[*‡]

Region	Week 43 Cases	Week 43 Rate[‡]	2019-2020* Season-to-Date	2019-2020* Season-to-Date Rate[‡]
Central	7	1.03	69	10.19
Eastern	43	1.90	128	5.65
Northwest	13	0.81	46	2.88
Southeast	12	2.54	79	16.75
Southwest	15	1.40	77	7.19
Total	90	1.48	399	6.56

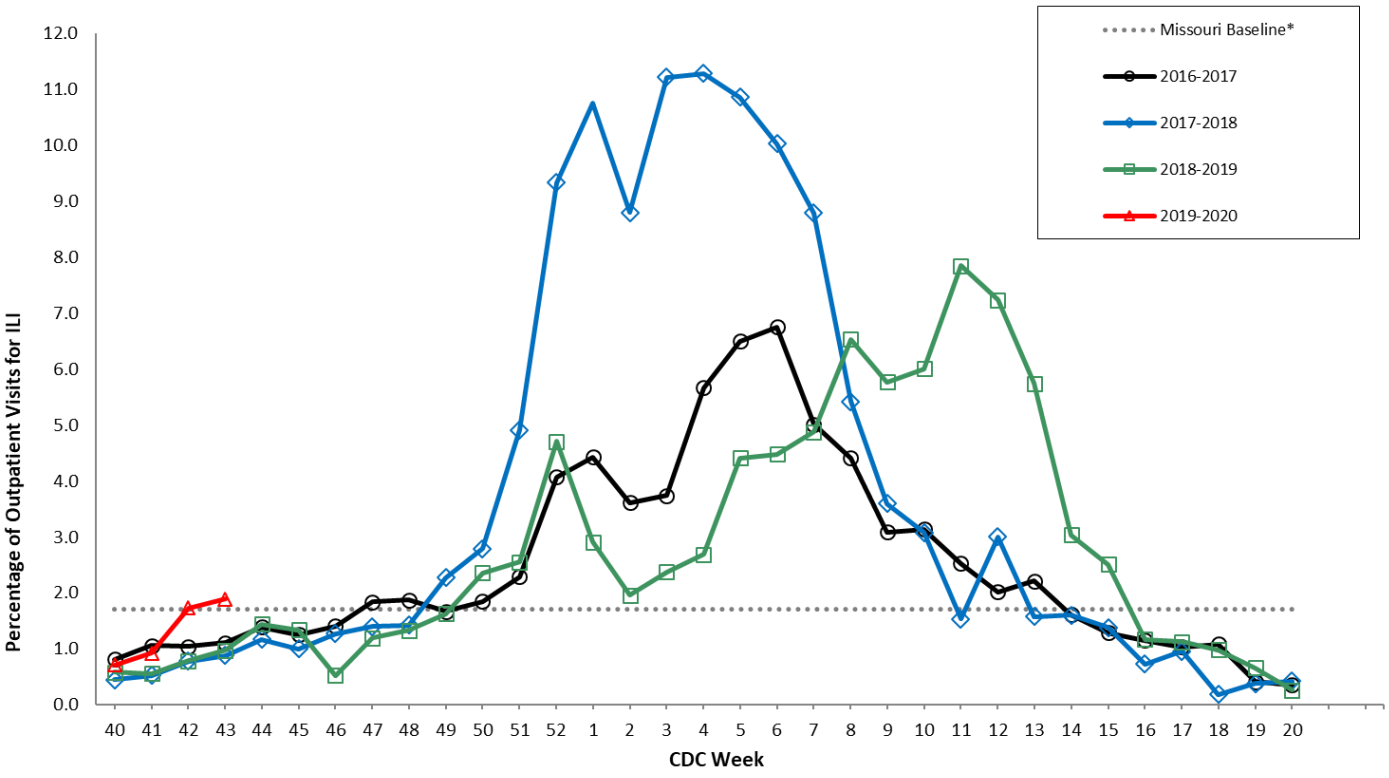
[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
[‡]Incidence Rate per 100,000 population

Figure 4. Number of Laboratory-positive[†] Influenza Cases by CDC Week, Missouri, 2016-2020[*]



[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).Data Source: Missouri Health Information Surveillance System (WebSurv).

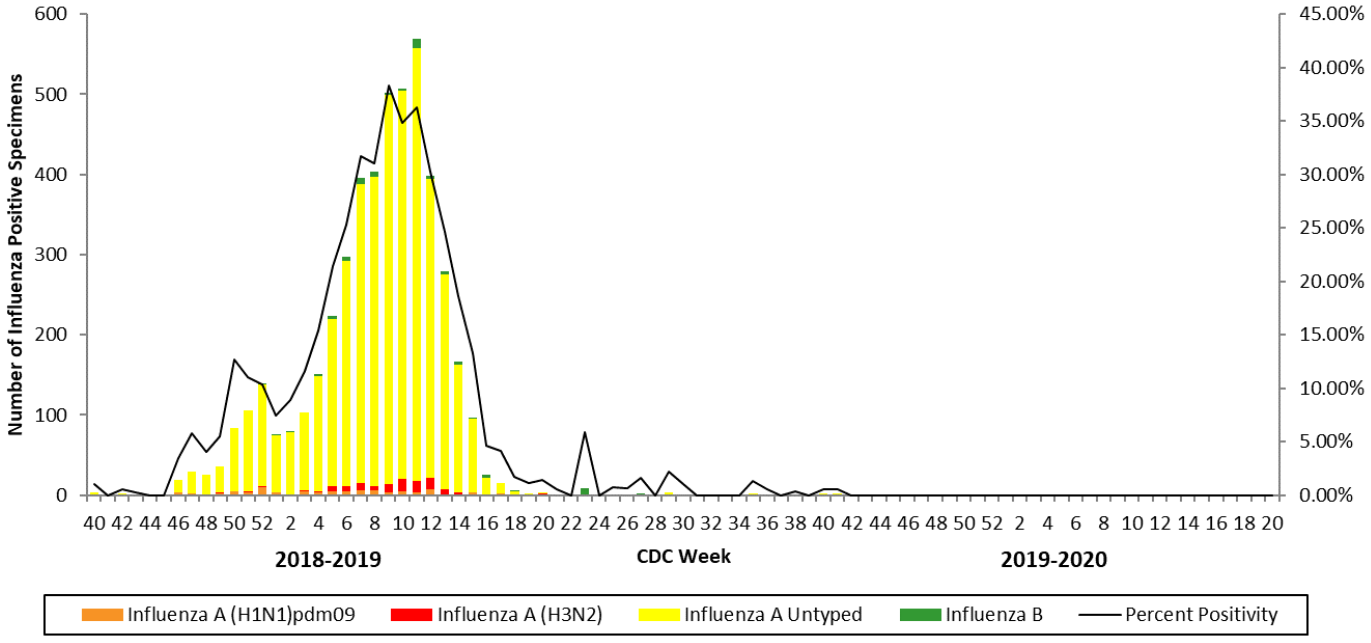
Figure 5. Percentage of Outpatient Visits for Influenza-like Illness (ILI), Missouri Outpatient ILI Surveillance Network (ILINet) 2016-2020*†



*The ILINet Region 7 (MO, IA, KS, NE) baseline is the mean percentage of patient visits for ILI during non-influenza weeks for the previous three seasons, plus two standard deviations. A non-influenza week is defined as periods of two or more consecutive weeks in which each week accounted for less than 2% of the season's total number of specimens that tested positive for influenza. Data Source: U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Centers for Disease Control and Prevention (CDC).

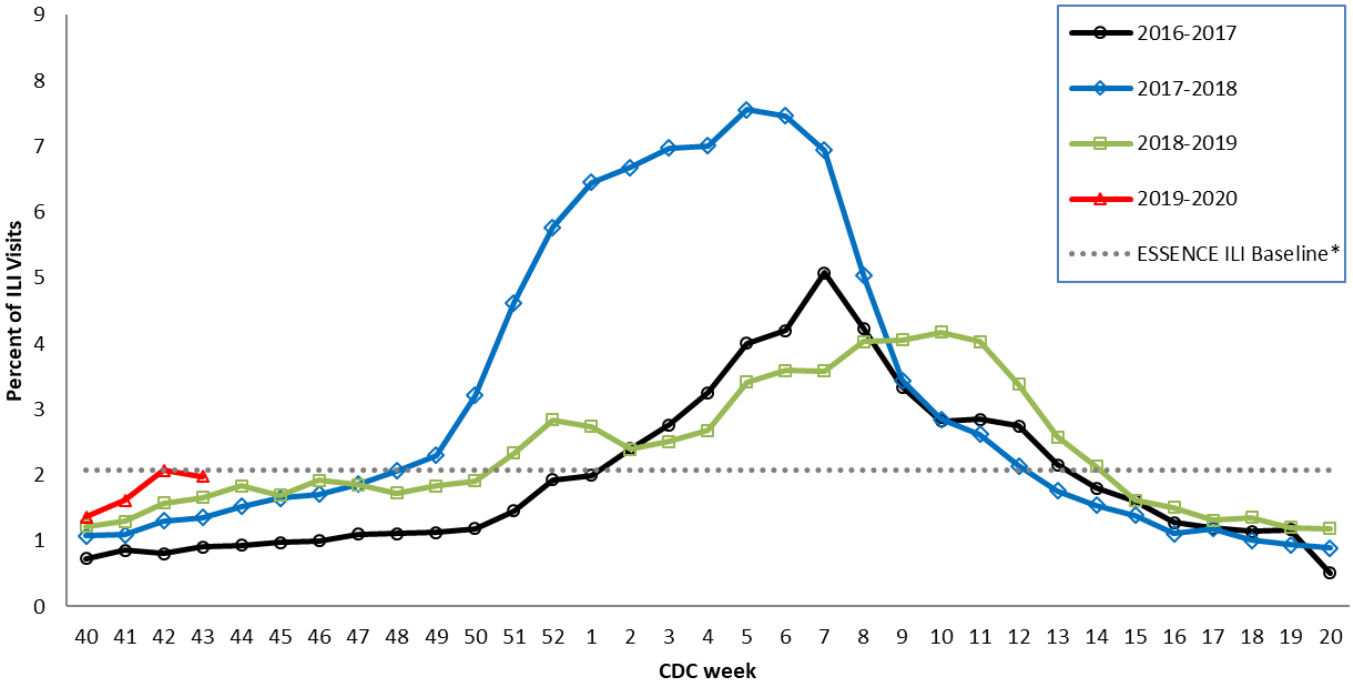
†2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).

Figure 6. Season-to-Date PCR (+) Tests for Influenza in Missouri



Data Source: National Respiratory and Enteric Virus Surveillance System (NREVSS), Centers for Disease Control and Prevention (CDC).
2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).

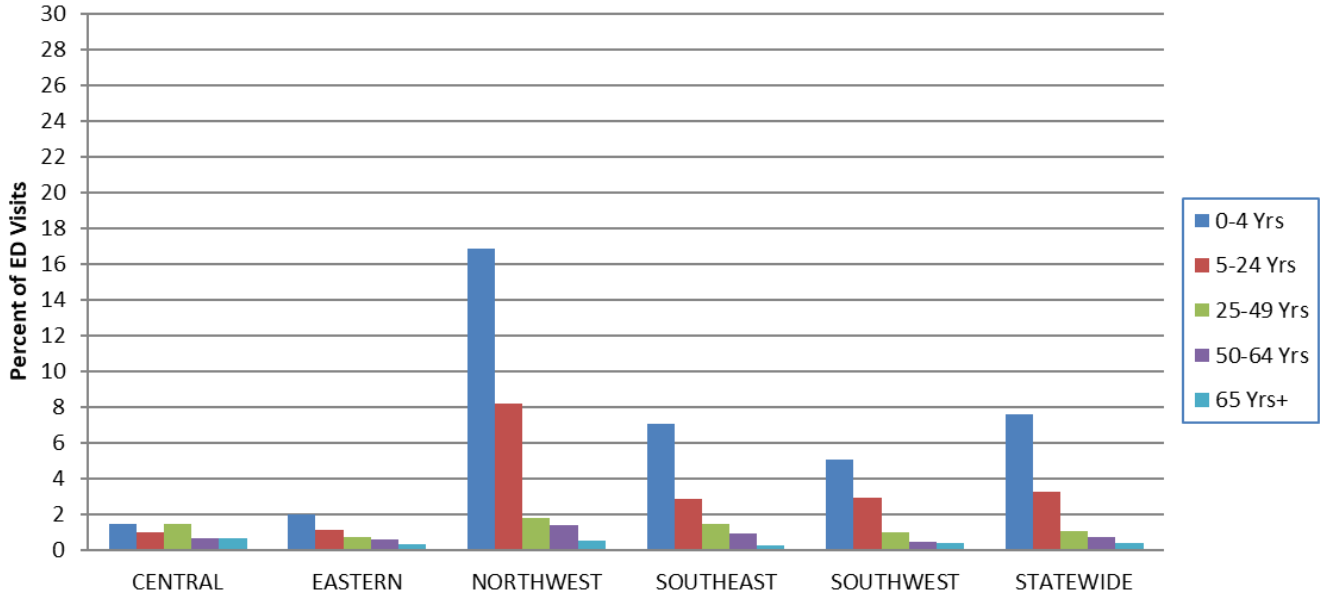
Figure 7. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, 2016-2020 Influenza Seasons*‡



*The ESSENCE ILI Baseline is the mean percent of ILI visits for each week during the previous three years (2016-18) when percentage of ILI visits were less than 2% of total visits, plus two standard deviations. Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.

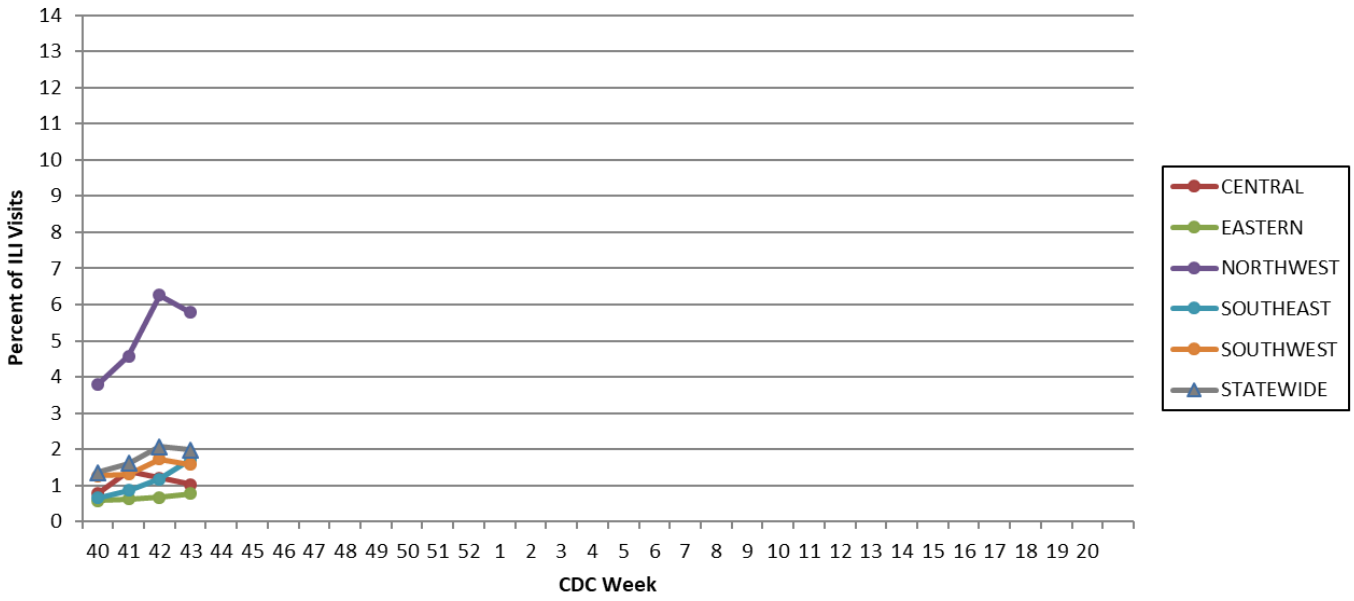
‡The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 8. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Age Group, Region and Statewide, Week 43, 2019*



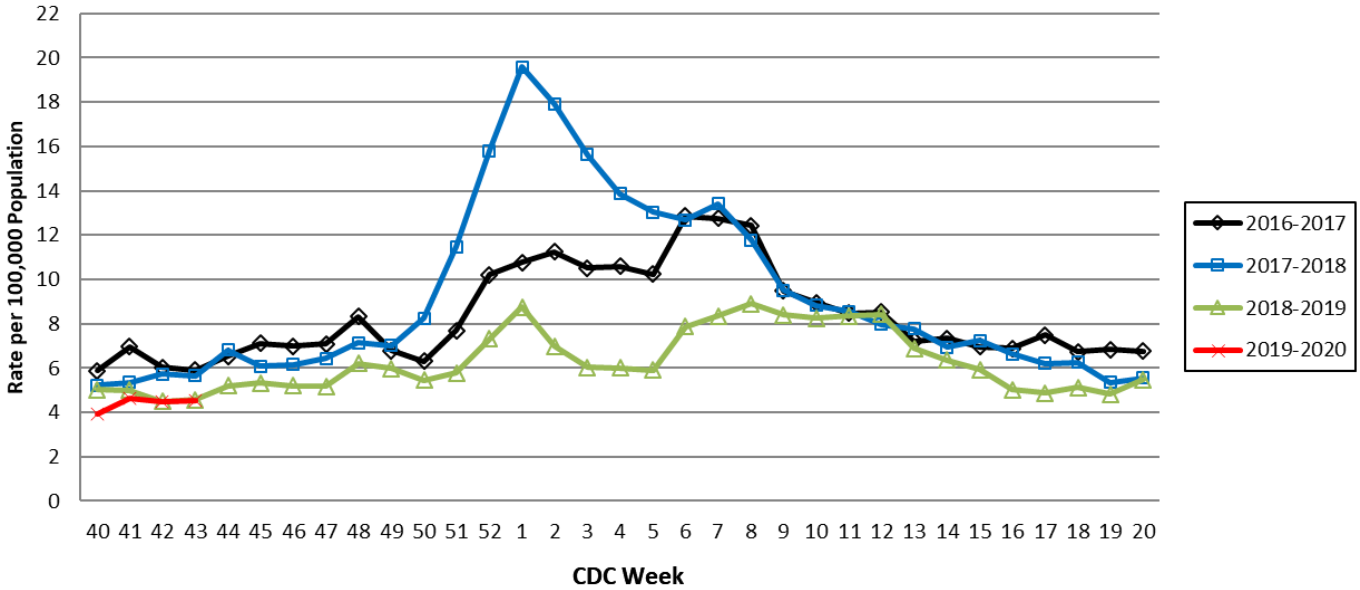
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 9. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Region and Statewide, 2019-2020 Influenza Season*



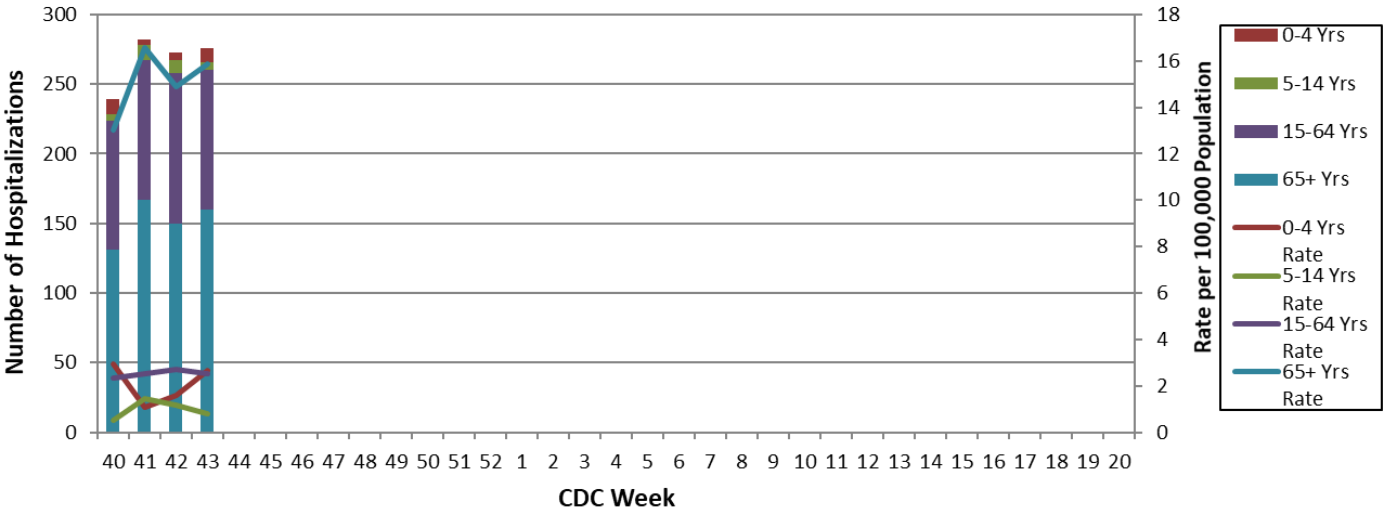
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 10. Weekly Rate of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Missouri Hospitals, 2016-2020 Influenza Seasons



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.
Population data from Missouri Census Data Center 2017 (https://census.missouri.edu).

Figure 11. Number of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Participating Missouri Hospitals, by Age Group, Week 43, 2019-2020 Influenza Season



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.

Additional Influenza Data Sources:

Centers for Disease Control and Prevention: National Influenza Surveillance (FluView):
http://www.cdc.gov/flu/weekly/fluactivitysurv.htm

The National Respiratory and Enteric Virus Surveillance System (NREVSS):
https://www.cdc.gov/surveillance/nrevss/

World Health Organization: International Influenza Surveillance:
http://www.who.int/influenza/surveillance_monitoring/en/

Missouri Weekly Influenza Surveillance Report
2019-2020 Influenza Season[1]

Week 44: October 27, 2019 – November 2, 2019

All data are preliminary and may change as more reports are received.

Summary:

- The estimated influenza activity in Missouri is Sporadic[2].
- A total of 96 laboratory-positive[3] influenza cases (48 influenza A and 48 influenza B) were reported during Week 44. The season-to-date total of laboratory-positive influenza cases is 538 (51.5% influenza A, 47.9% influenza B, and 0.6% untyped). No laboratory-positive cases of influenza were reported by the Missouri State Public Health Laboratory (MSPHL) during Week 44. The percentage of respiratory specimens testing positive for influenza in Missouri laboratories reporting to the National Respiratory and Enteric Virus Surveillance System (NREVSS) also remained low during Week 44 (Figure 6).
- Influenza-like illness (ILI) activity was above baseline the Missouri Outpatient ILI Surveillance Network (ILINet) and below baseline for the hospital emergency room visit chief complaint data reported through ESSENCE. The reported percentage of visits for ILI was 2.16% (Figure 5) and 1.93% (Figure 7) through ILINet and ESSENCE respectively.[4] The ILI data from a small number of sites located in the Northwest Region of the state is currently unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.
- No influenza-associated deaths have been reported in Missouri as of Week 44.[5]During Week 42, 30 deaths involving Pneumonia and Influenza (P&I) were reported to the Bureau of Vital Records.
- No influenza or ILI-associated outbreaks or school closures have been reported in Missouri as of Week 44.
- Seasonal influenza activity in the United States increased slightly, but remained low. National influenza surveillance information is prepared by CDC and is included in the weekly FluView report, which is available online at http://www.cdc.gov/flu/weekly/fluactivitysurv.htm.

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[1]The 2019-2020 influenza season begins CDC Week 40 (week ending October 5, 2019) and ends CDC Week 39 (week ending September 26, 2020).

[2]Sporadic is defined as: Small numbers of laboratory-confirmed influenza cases or a single laboratory-confirmed influenza outbreak has been reported, but there is no increase in cases of ILI.

[3]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.

[4]Influenza-like illness (ILI) is defined by ILINet as fever (temperature of 100ºF [37.8ºC] or greater) and a cough and/or a sore throat without a known cause other than influenza. ILI is defined by ESSENCE as Emergency Department chief complaints for Influenza or (FeverPlus and (Cough or SoreThroat) and not NonILIFevers).

[5]All influenza-associated deaths became reportable in Missouri in 2016.

Surveillance Data:

Interactive Maps

The jurisdiction-specific influenza data are provided though interactive maps available at http://bit.ly/moflu19. *Click on the jurisdiction to view the influenza data specific to that jurisdiction.*

- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, CDC Week 44**
- **Reported Week-specific Rate per 100,000 Population, CDC Week 44**
- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, Season-to-Date**
- **Reported Rate per 100,000 Population, Season-to-Date**

Data Figures

Figure 1. Number of Laboratory-positive† Influenza Cases by Influenza Type, Missouri, CDC Week 44 (October 27, 2019 – November 2, 2019)*

Influenza Type	Week 42	Week 43	Week 44	2019-2020* Season-to-Date
Influenza A	62	63	48	277
Influenza B	48	64	48	258
Influenza Unknown Or Untyped	2	0	0	3
Total	112	127	96	538

†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv).

Figure 2. Number of Laboratory-positive† Influenza Cases and Case Rates by Age Group, Missouri, CDC Week 44 (October 27, 2019 – November 2, 2019)*‡

Age Group	Week 44 Cases	Week 44 Rate‡	2019-2020* Season-to-Date	2019-2020* Season-to-Date Rate‡
00-04	15	4.01	104	27.78
05-24	34	2.12	161	10.03
25-49	19	0.99	119	6.22
50-64	14	1.13	80	6.47
65+	14	1.47	74	7.75
Total	96	1.58	538	8.84

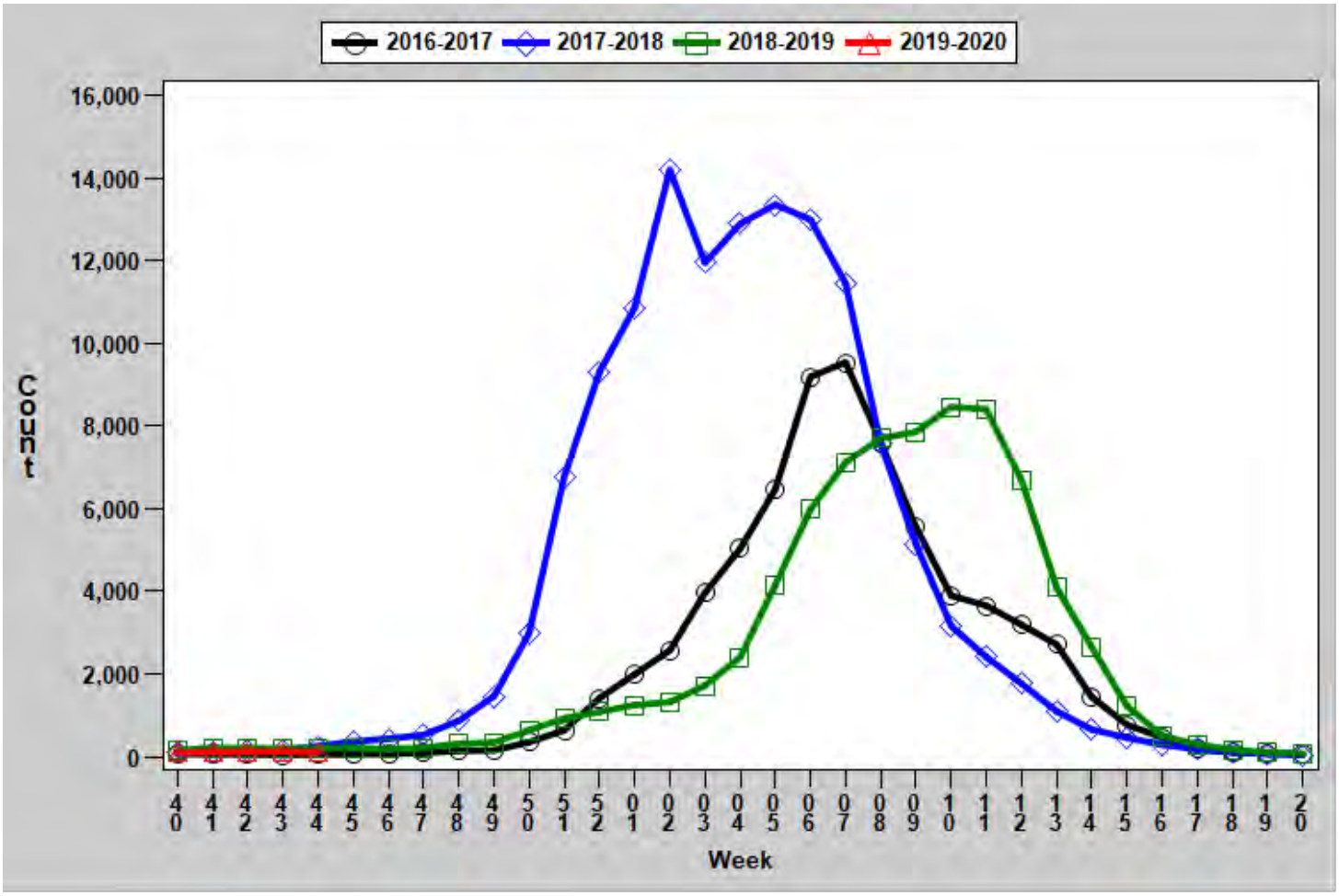
†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
‡Incidence Rate per 100,000 population

Figure 3. Number of Laboratory-positive[†] Influenza Cases and Case Rates by Region, Missouri, CDC Week 44 (October 27, 2019 – November 2, 2019)[*‡]

Region	Week 44 Cases	Week 44 Rate[‡]	2019-2020* Season-to-Date	2019-2020* Season-to-Date Rate[‡]
Central	13	1.92	87	12.85
Eastern	21	0.93	156	6.88
Northwest	12	0.75	62	3.88
Southeast	25	5.30	117	24.80
Southwest	25	2.33	116	10.83
Total	96	1.58	538	8.84

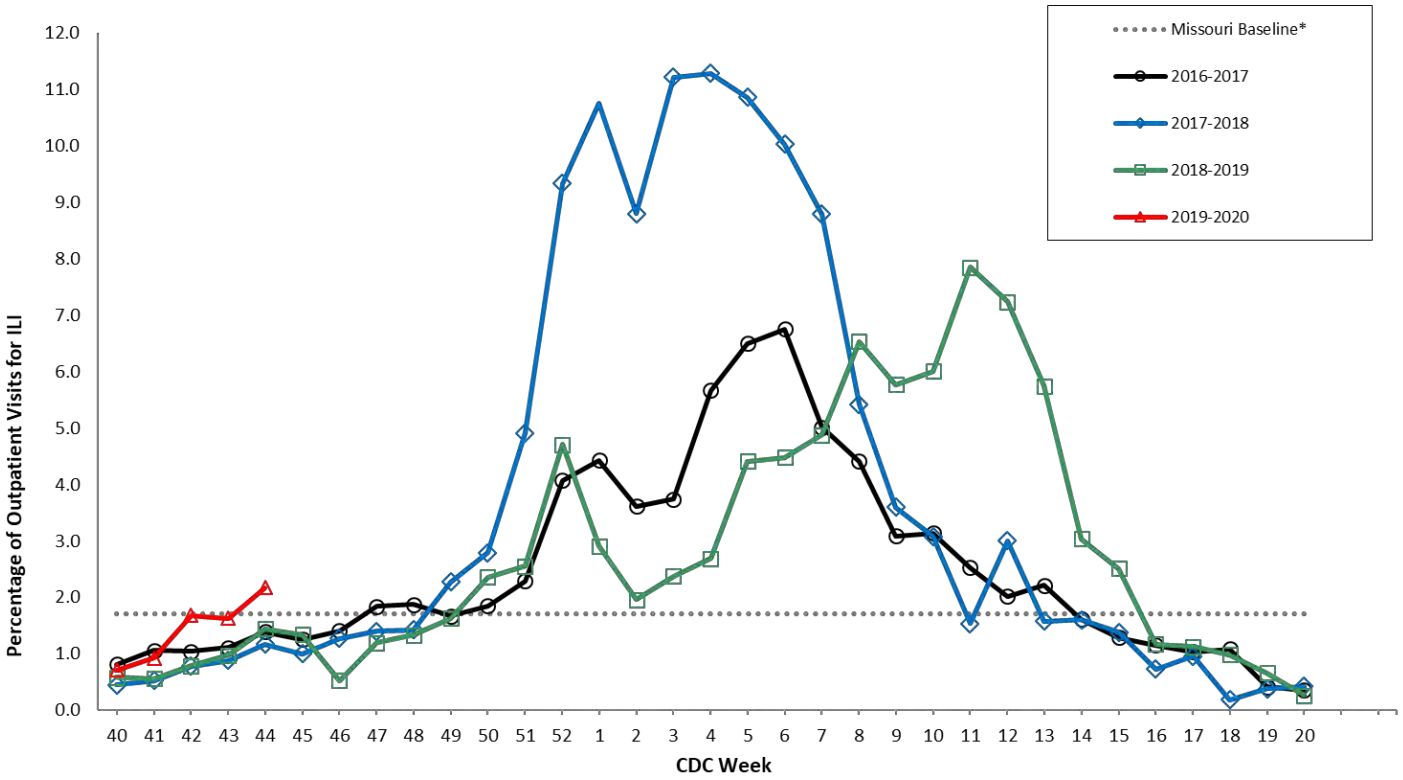
[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
[‡]Incidence Rate per 100,000 population

Figure 4. Number of Laboratory-positive[†] Influenza Cases by CDC Week, Missouri, 2016-2020[*]



[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).Data Source: Missouri Health Information Surveillance System (WebSurv).

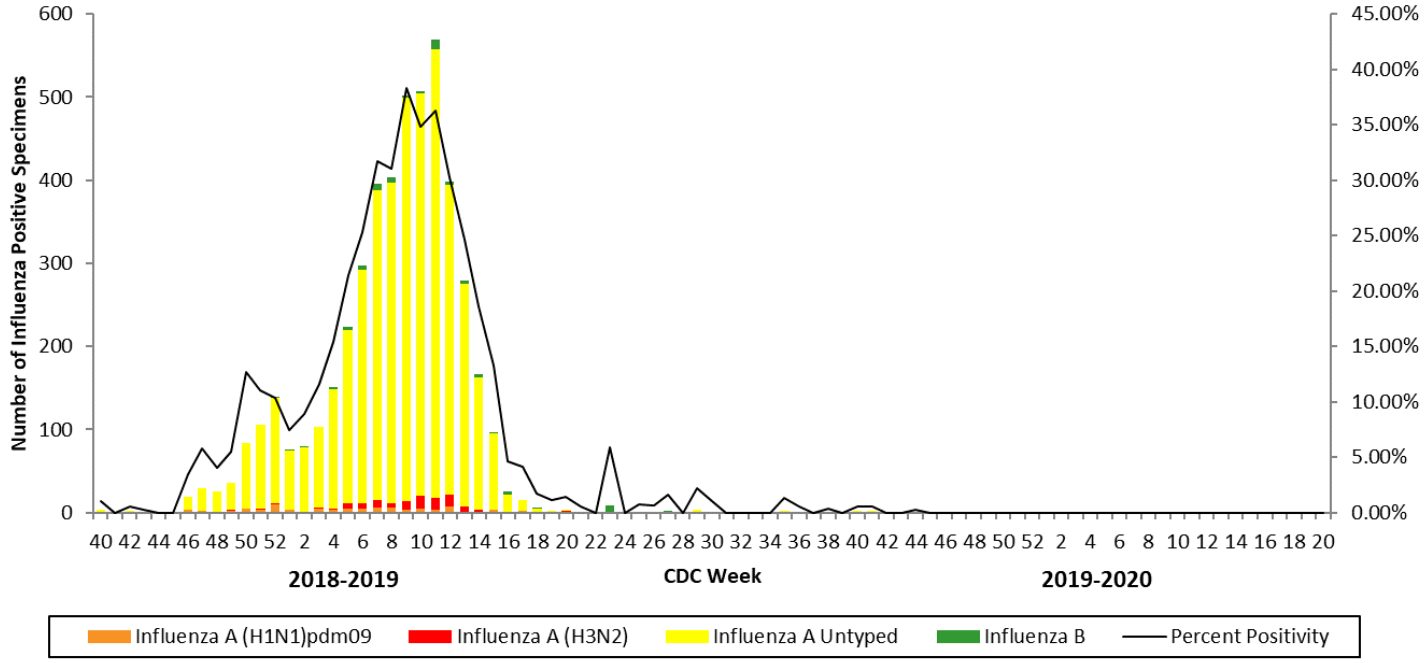
Figure 5. Percentage of Outpatient Visits for Influenza-like Illness (ILI), Missouri Outpatient ILI Surveillance Network (ILINet) 2016-2020*†



*The ILINet Region 7 (MO, IA, KS, NE) baseline is the mean percentage of patient visits for ILI during non-influenza weeks for the previous three seasons, plus two standard deviations. A non-influenza week is defined as periods of two or more consecutive weeks in which each week accounted for less than 2% of the season's total number of specimens that tested positive for influenza. Data Source: U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Centers for Disease Control and Prevention (CDC).

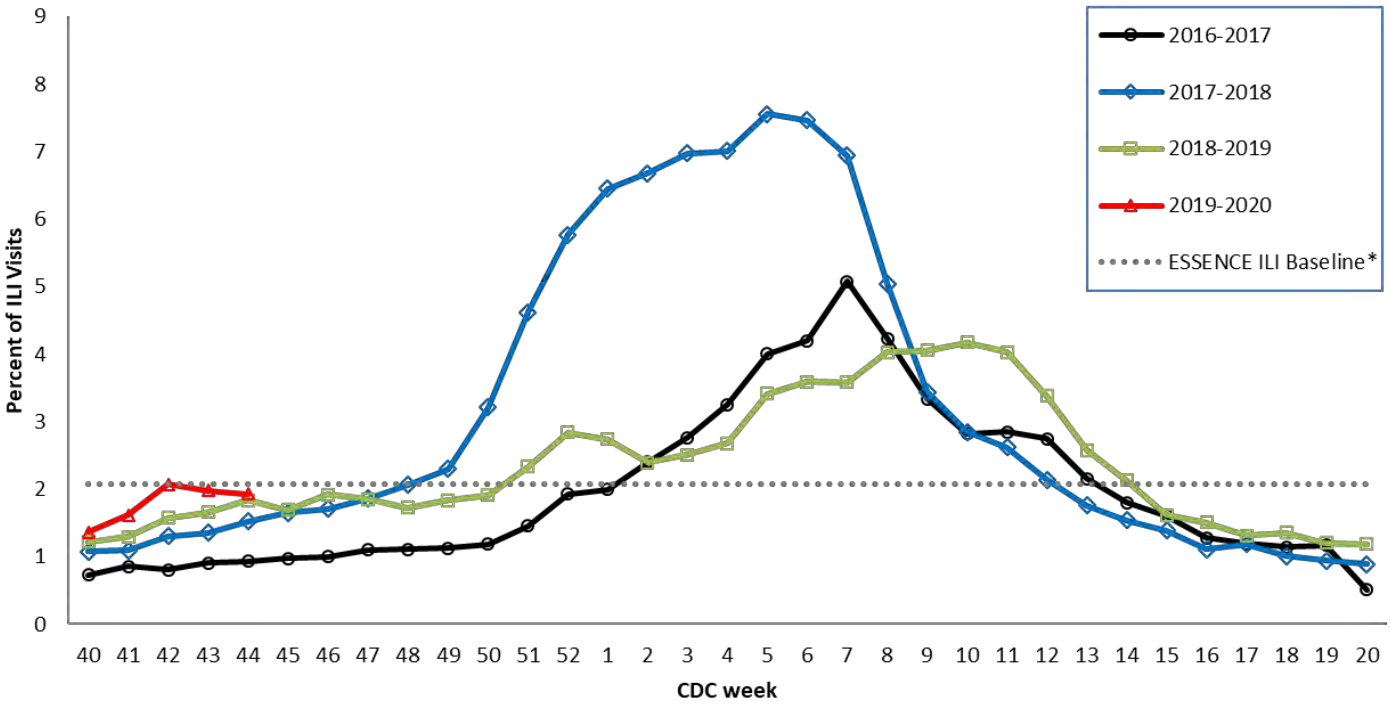
†2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).

Figure 6. Season-to-Date PCR (+) Tests for Influenza in Missouri



Data Source: National Respiratory and Enteric Virus Surveillance System (NREVSS), Centers for Disease Control and Prevention (CDC).
2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).

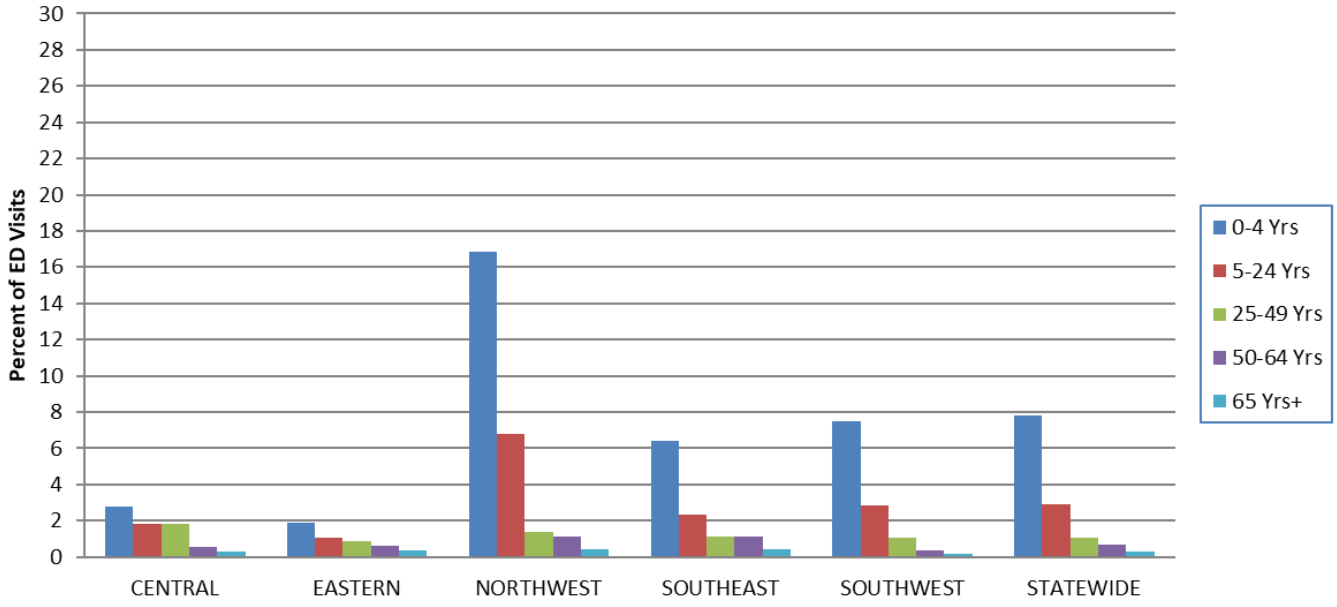
Figure 7. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, 2016-2020 Influenza Seasons*‡



*The ESSENCE ILI Baseline is the mean percent of ILI visits for each week during the previous three years (2016-18) when percentage of ILI visits were less than 2% of total visits, plus two standard deviations. Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.

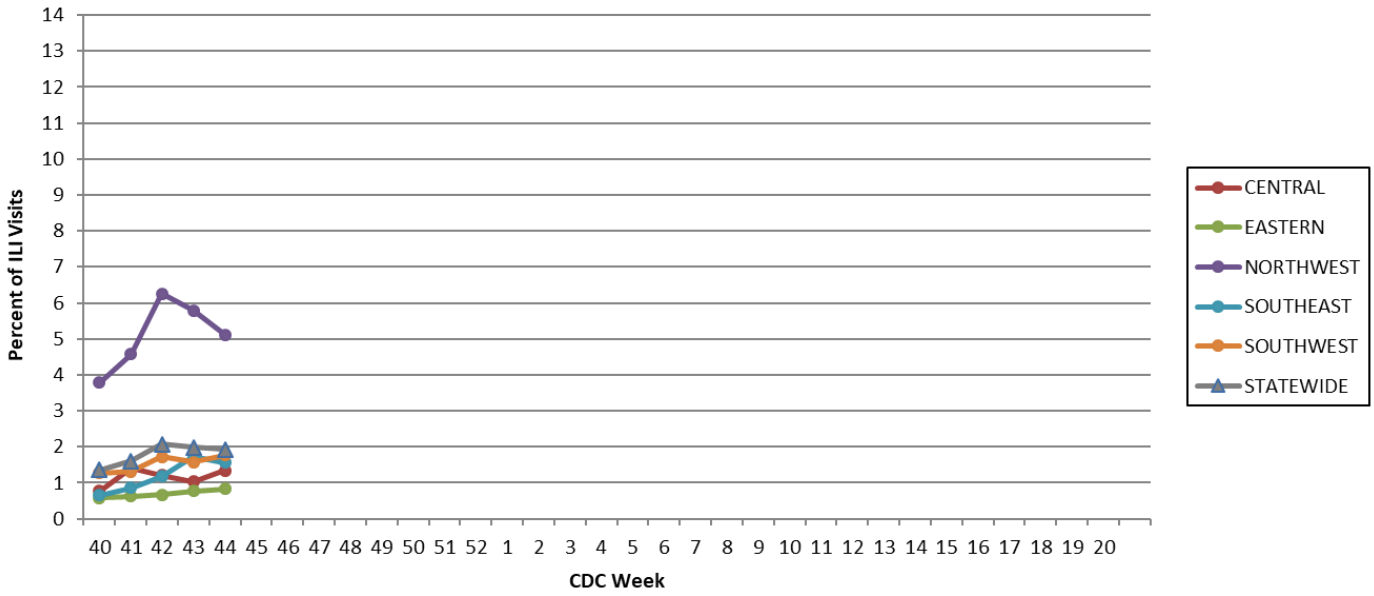
‡The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 8. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Age Group, Region and Statewide, Week 44, 2019*



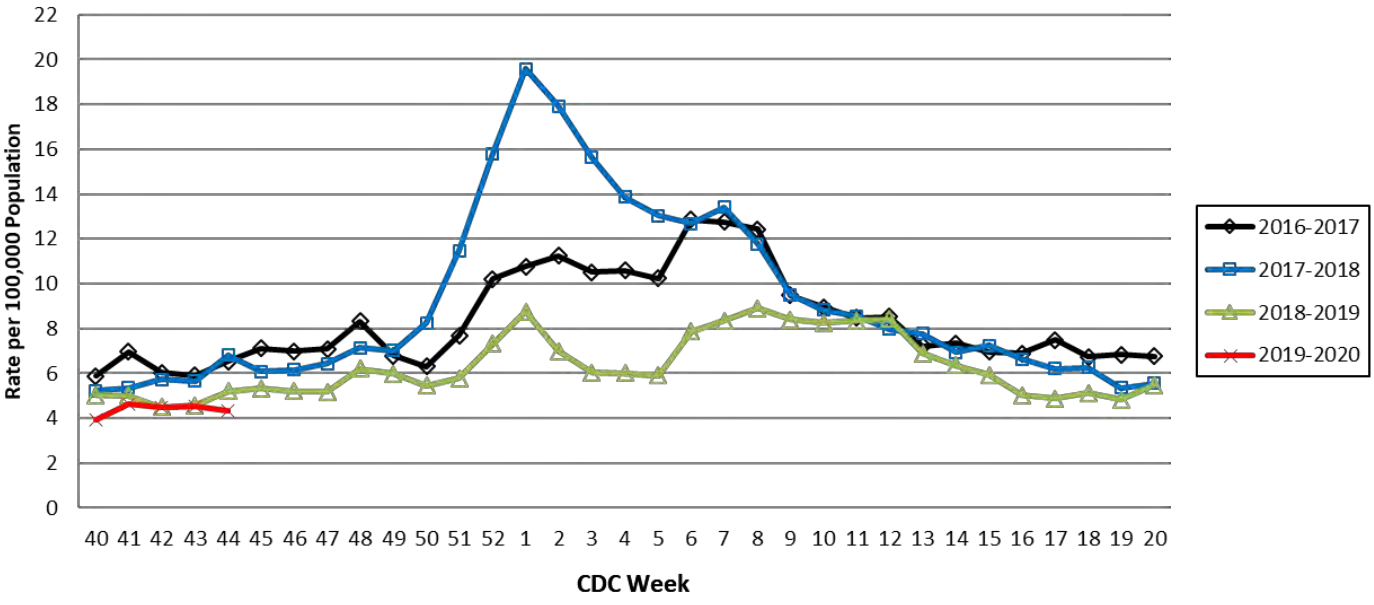
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 9. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Region and Statewide, 2019-2020 Influenza Season*



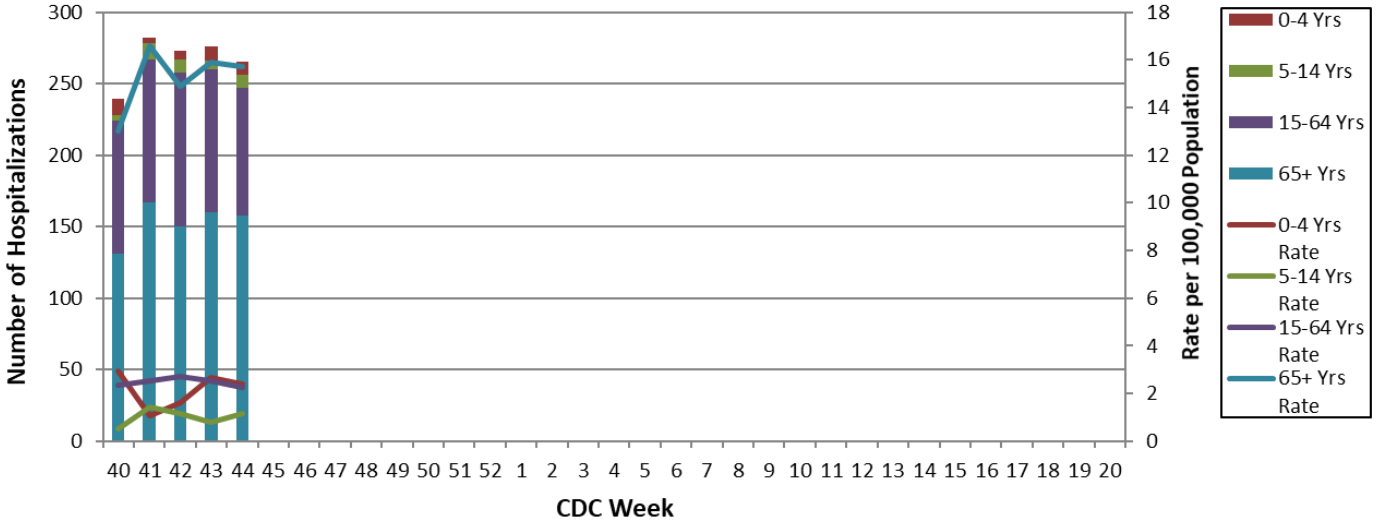
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 10. Weekly Rate of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Missouri Hospitals, 2016-2020 Influenza Seasons



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.
Population data from Missouri Census Data Center 2017 (https://census.missouri.edu).

Figure 11. Number of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Participating Missouri Hospitals, by Age Group, Week 44, 2019-2020 Influenza Season



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.

Additional Influenza Data Sources:

Centers for Disease Control and Prevention: National Influenza Surveillance (FluView):
http://www.cdc.gov/flu/weekly/fluactivitysurv.htm

The National Respiratory and Enteric Virus Surveillance System (NREVSS):
https://www.cdc.gov/surveillance/nrevss/

World Health Organization: International Influenza Surveillance:
http://www.who.int/influenza/surveillance_monitoring/en/

Missouri Weekly Influenza Surveillance Report
2019-2020 Influenza Season[1]

Week 45: November 3, 2019 – November 9, 2019

All data are preliminary and may change as more reports are received.

Summary:

- The estimated influenza activity in Missouri is Sporadic[2].
- A total of 106 laboratory-positive[3] influenza cases (55 influenza A and 51 influenza B) were reported during Week 45. The season-to-date total of laboratory-positive influenza cases is 690 (51% influenza A, 48.4% influenza B, and 0.6% untyped). No laboratory-positive cases of influenza were reported by the Missouri State Public Health Laboratory (MSPHL) during Week 45. The percentage of respiratory specimens testing positive for influenza in Missouri laboratories reporting to the National Respiratory and Enteric Virus Surveillance System (NREVSS) continues to remain low during Week 45 (Figure 6).
- Influenza-like illness (ILI) activity was above baseline the Missouri Outpatient ILI Surveillance Network (ILINet) and for the hospital emergency room visit chief complaint data reported through ESSENCE. The reported percentage of visits for ILI was 2.17% (Figure 5) and 2.25% (Figure 7) through ILINet and ESSENCE respectively.[4] The ILI data from a small number of sites located in the Northwest Region of the state is currently unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.
- No influenza-associated deaths have been reported in Missouri as of Week 45.[5] During Week 44, 39 deaths involving Pneumonia and Influenza (P&I) were reported to the Bureau of Vital Records, resulting in a season-to-date total of 185 P&I associated deaths in Missouri.[6].
- No influenza or ILI-associated outbreaks or school closures have been reported in Missouri as of Week 45.
- Seasonal influenza activity in the United States remains low, but is increasing. National influenza surveillance information is prepared by CDC and is included in the weekly FluView report, which is available online at http://www.cdc.gov/flu/weekly/fluactivitysurv.htm.

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[1]The 2019-2020 influenza season begins CDC Week 40 (week ending October 5, 2019) and ends CDC Week 39 (week ending September 26, 2020).

[2]Sporadic is defined as: Small numbers of laboratory-confirmed influenza cases or a single laboratory-confirmed influenza outbreak has been reported, but there is no increase in cases of ILI.

[3]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.

[4]Influenza-like illness (ILI) is defined by ILINet as fever (temperature of 100ºF [37.8ºC] or greater) and a cough and/or a sore throat without a known cause other than influenza. ILI is defined by ESSENCE as Emergency Department chief complaints for Influenza or (FeverPlus and (Cough or SoreThroat) and not NonILIFevers).

[5]All influenza-associated deaths became reportable in Missouri in 2016.

[6]The P&I data are available one week later. The P&I data for the CDC Week provided is the most current data available.

Surveillance Data:

Interactive Maps

The jurisdiction-specific influenza data are provided though interactive maps available at http://bit.ly/moflu19. *Click on the jurisdiction to view the influenza data specific to that jurisdiction.*

- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, CDC Week 45**
- **Reported Week-specific Rate per 100,000 Population, CDC Week 45**
- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, Season-to-Date**
- **Reported Rate per 100,000 Population, Season-to-Date**

Data Figures

Figure 1. Number of Laboratory-positive† Influenza Cases by Influenza Type, Missouri, CDC Week 45 (November 3, 2019 – November 9, 2019)*

Influenza Type	Week 43	Week 44	Week 45	2019-2020* Season-to-Date
Influenza A	66	63	55	352
Influenza B	68	67	51	334
Influenza Unknown Or Untyped	0	1	0	4
Total	134	131	106	690

†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv).

Figure 2. Number of Laboratory-positive† Influenza Cases and Case Rates by Age Group, Missouri, CDC Week 45 (November 3, 2019 – November 9, 2019)*‡

Age Group	Week 45 Cases	Week 45 Rate‡	2019-2020* Season-to-Date	2019-2020* Season-to-Date Rate‡
00-04	27	7.21	138	36.86
05-24	31	1.93	207	12.90
25-49	21	1.10	153	8.00
50-64	15	1.21	103	8.33
65+	12	1.26	89	9.32
Total	106	1.74	690	11.34

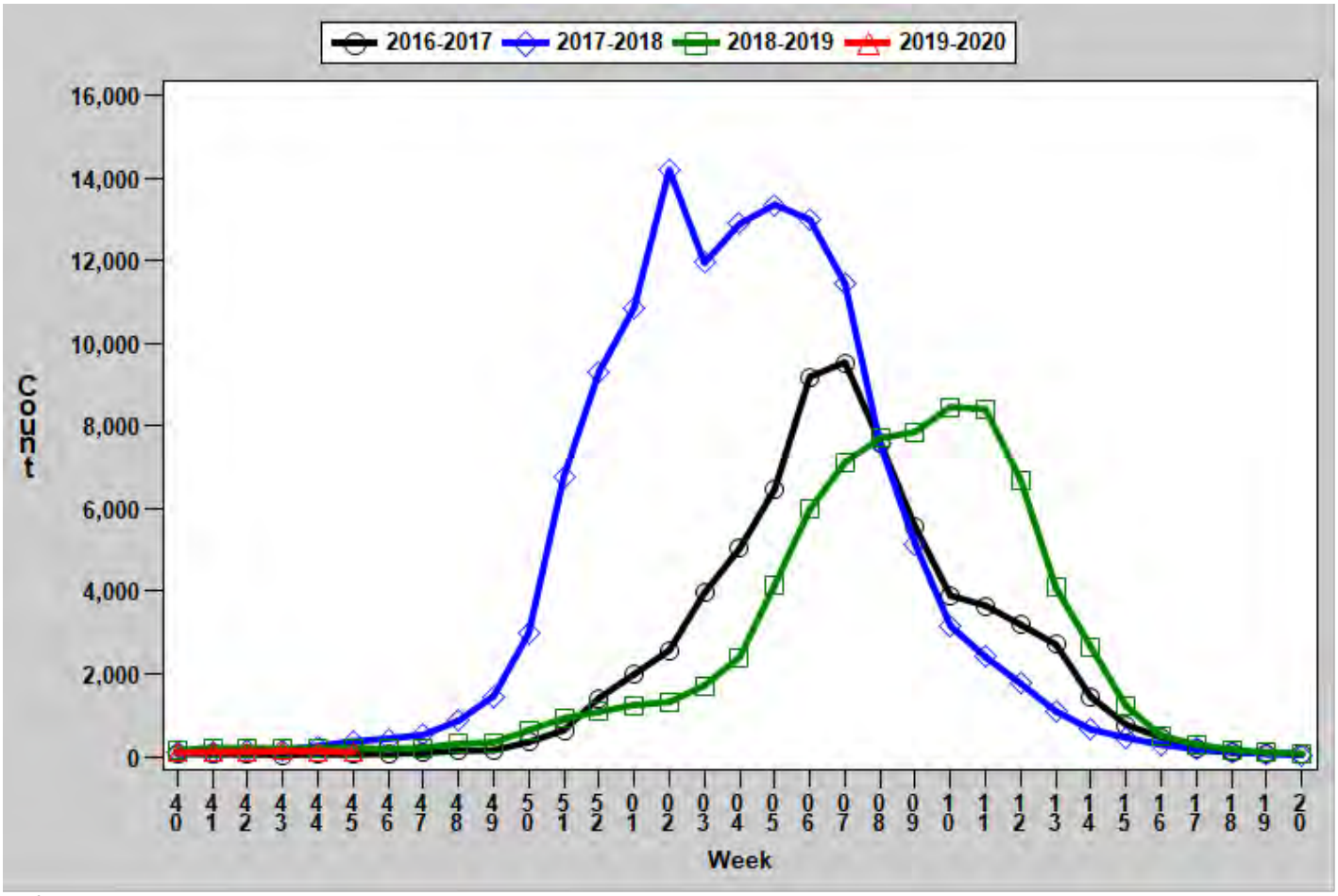
†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
‡Incidence Rate per 100,000 population

Figure 3. Number of Laboratory-positive[†] Influenza Cases and Case Rates by Region, Missouri, CDC Week 45 (November 3, 2019 – November 9, 2019)[*‡]

Region	Week 45 Cases	Week 45 Rate[‡]	2019-2020* Season-to-Date	2019-2020* Season-to-Date Rate[‡]
Central	15	2.22	108	15.95
Eastern	40	1.77	199	8.78
Northwest	8	0.50	71	4.44
Southeast	30	6.36	165	34.98
Southwest	13	1.21	147	13.72
Total	106	1.74	690	11.34

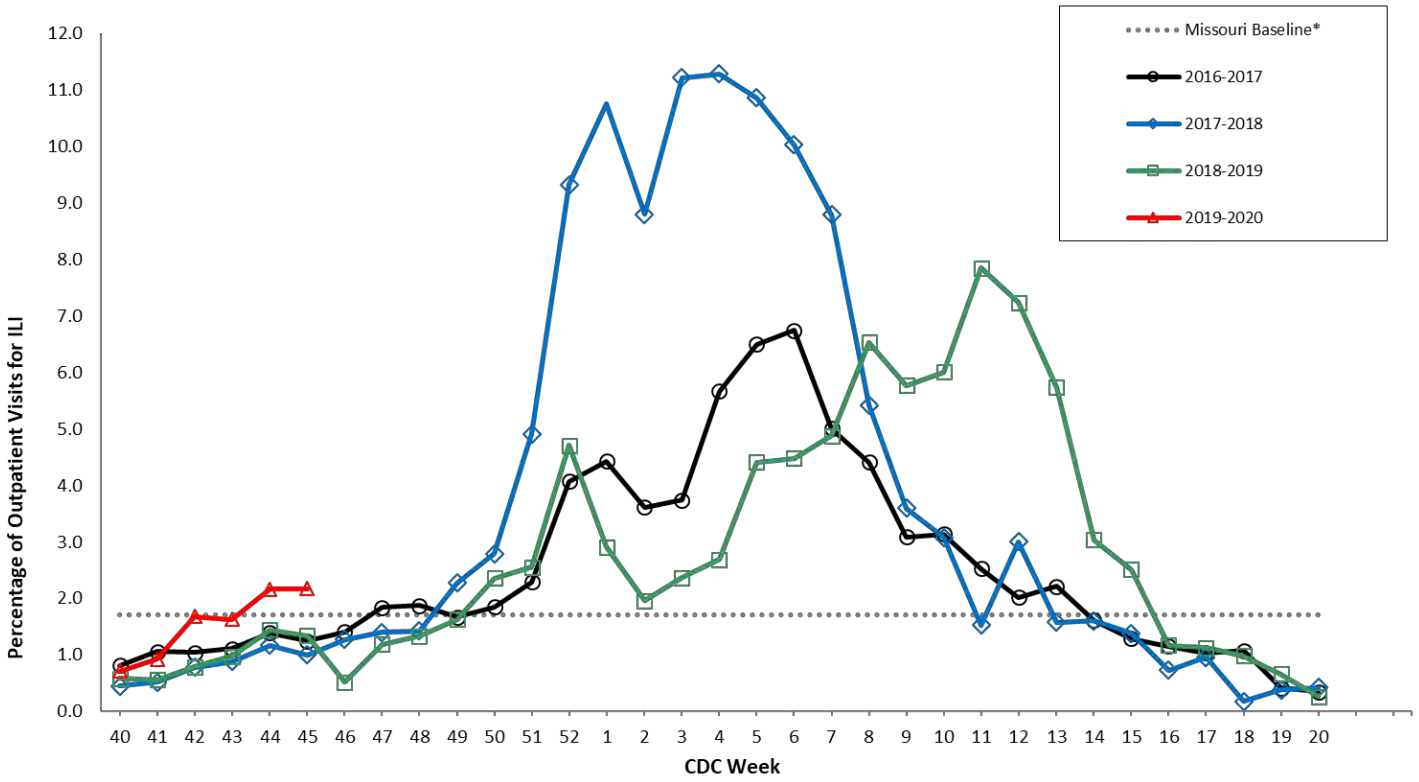
[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
[‡]Incidence Rate per 100,000 population

Figure 4. Number of Laboratory-positive[†] Influenza Cases by CDC Week, Missouri, 2016-2020[*]



[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).Data Source: Missouri Health Information Surveillance System (WebSurv).

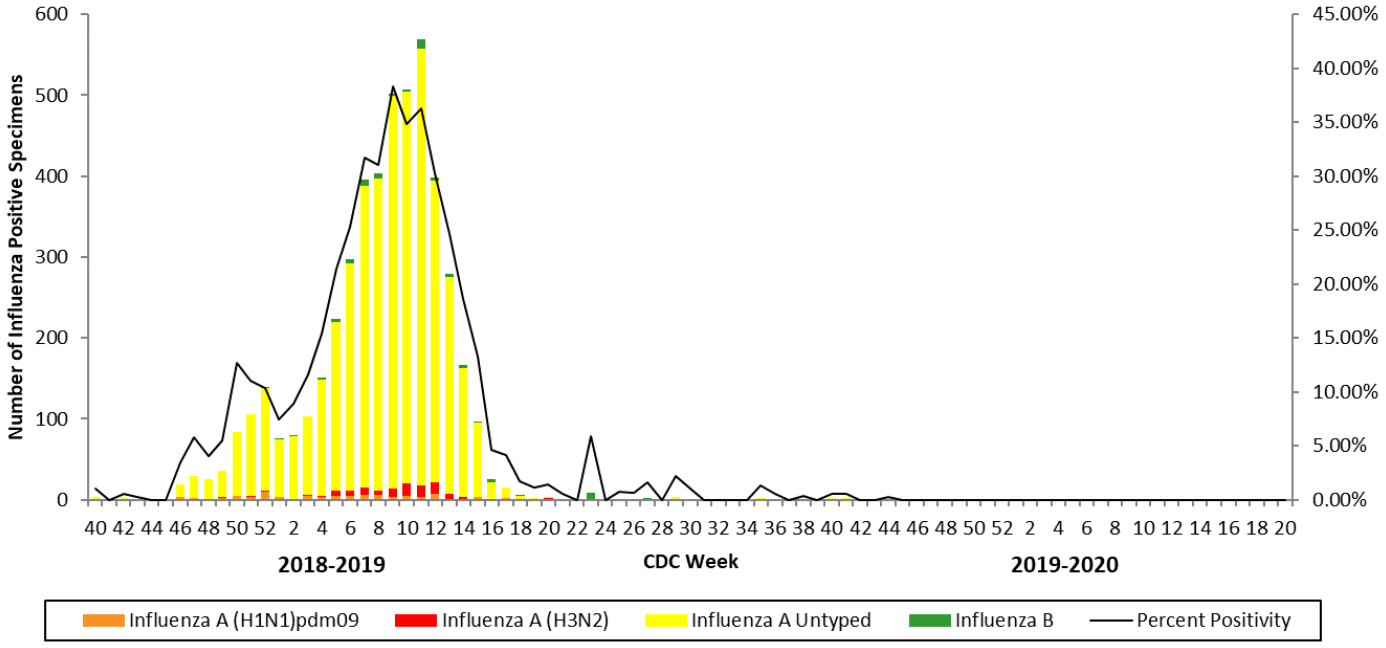
Figure 5. Percentage of Outpatient Visits for Influenza-like Illness (ILI), Missouri Outpatient ILI Surveillance Network (ILINet) 2016-2020*†



*The ILINet Region 7 (MO, IA, KS, NE) baseline is the mean percentage of patient visits for ILI during non-influenza weeks for the previous three seasons, plus two standard deviations. A non-influenza week is defined as periods of two or more consecutive weeks in which each week accounted for less than 2% of the season's total number of specimens that tested positive for influenza. Data Source: U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Centers for Disease Control and Prevention (CDC).

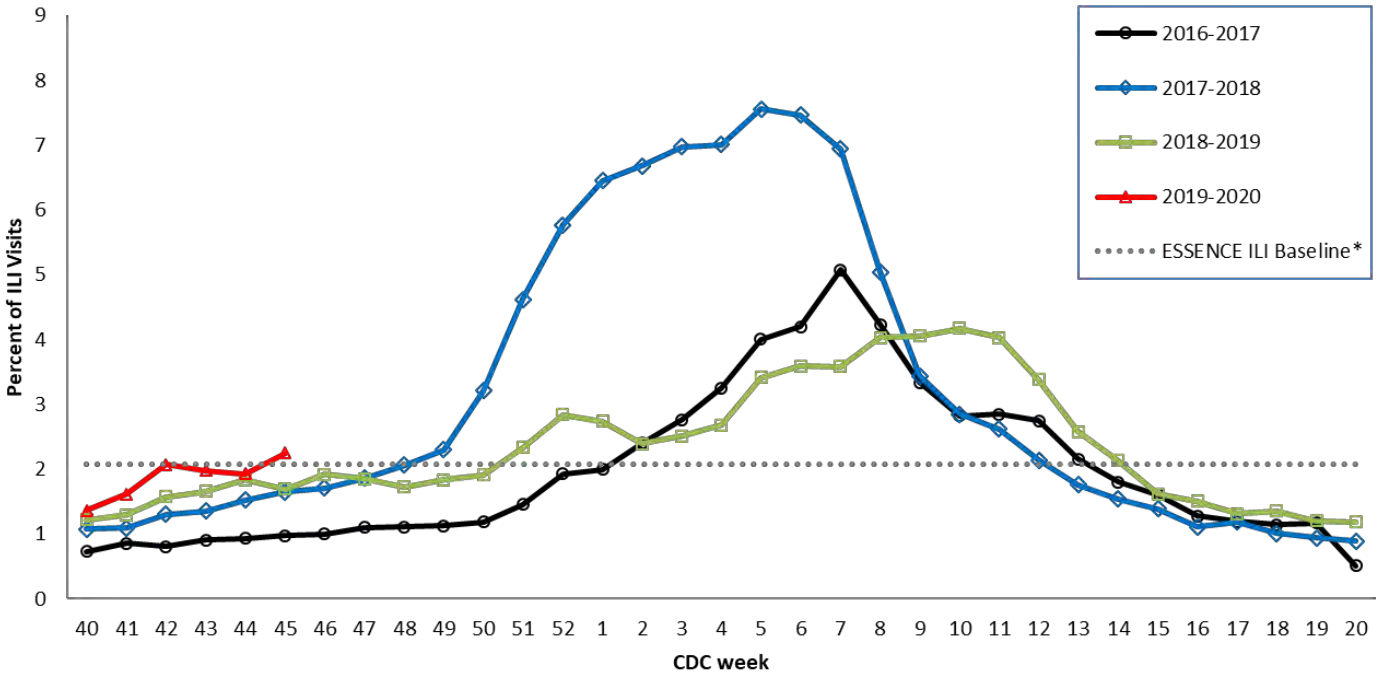
†2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).

Figure 6. Season-to-Date PCR (+) Tests for Influenza in Missouri



Data Source: National Respiratory and Enteric Virus Surveillance System (NREVSS), Centers for Disease Control and Prevention (CDC). 2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).

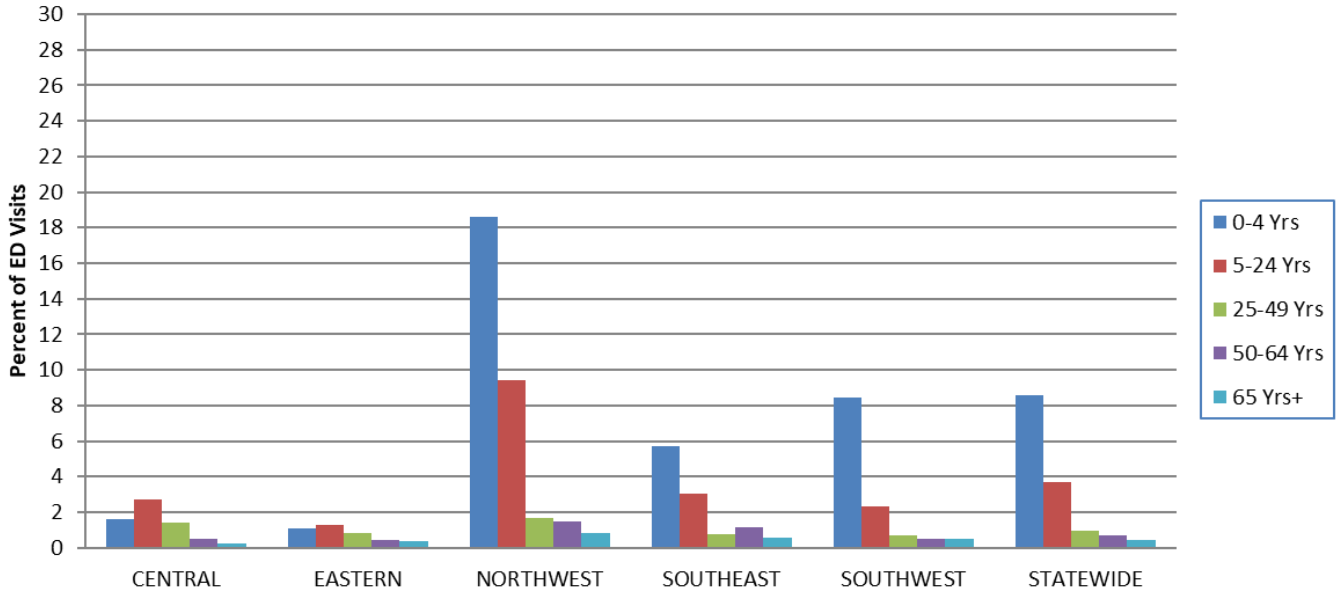
Figure 7. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, 2016-2020 Influenza Seasons*‡



*The ESSENCE ILI Baseline is the mean percent of ILI visits for each week during the previous three years (2016-18) when percentage of ILI visits were less than 2% of total visits, plus two standard deviations. Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.

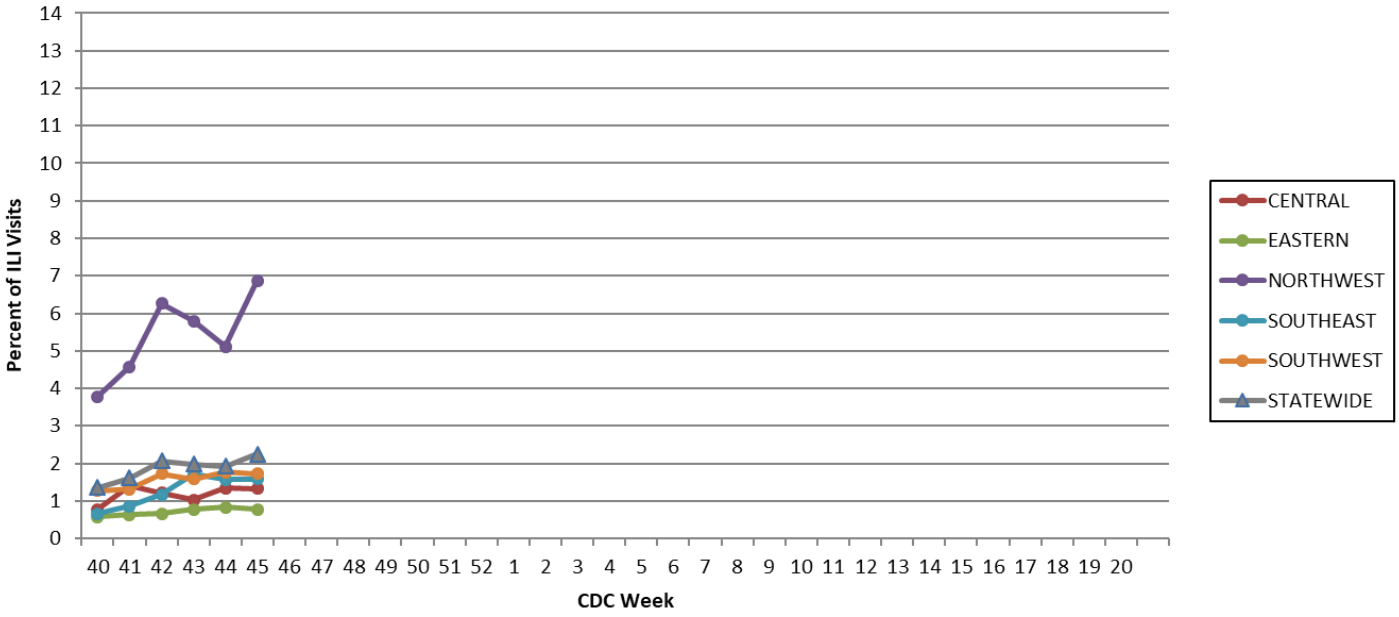
‡The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 8. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Age Group, Region and Statewide, Week 45, 2019*



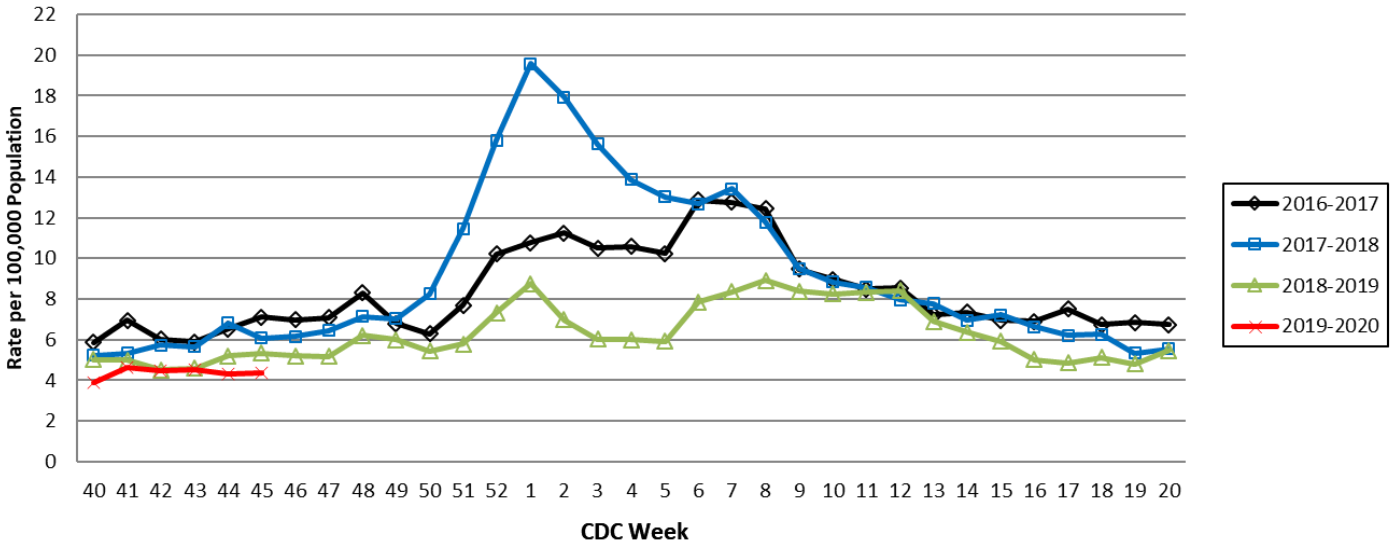
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 9. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Region and Statewide, 2019-2020 Influenza Season*



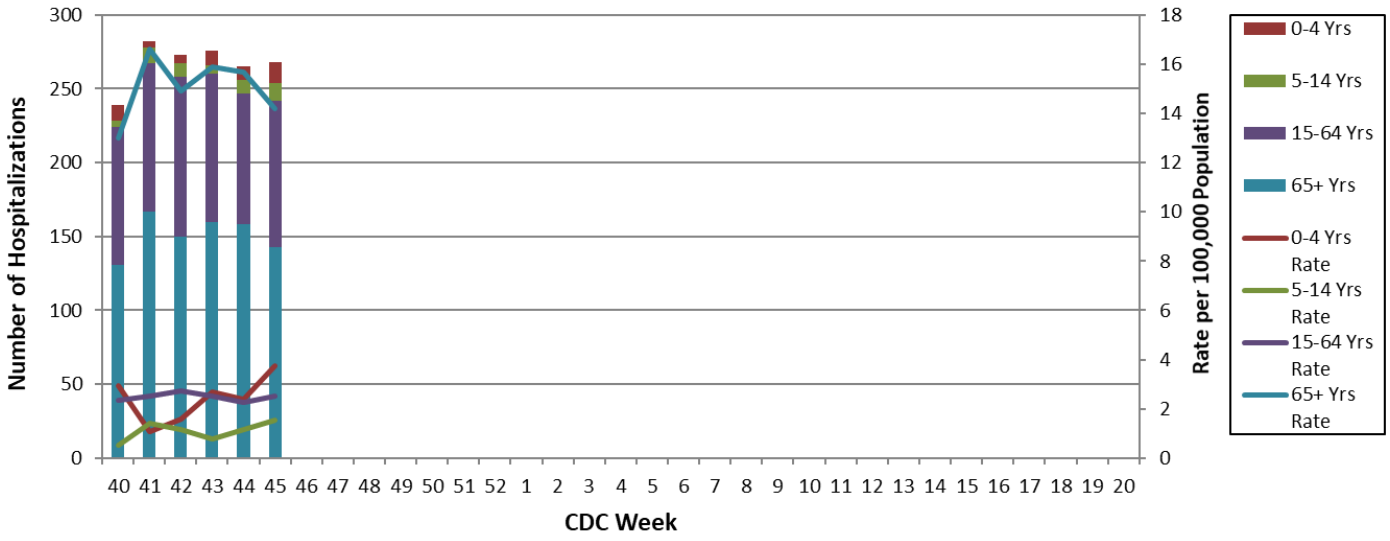
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 10. Weekly Rate of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Missouri Hospitals, 2016-2020 Influenza Seasons



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.
Population data from Missouri Census Data Center 2017 (https://census.missouri.edu).

Figure 11. Number of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Participating Missouri Hospitals, by Age Group, Week 45, 2019-2020 Influenza Season



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.

Additional Influenza Data Sources:

Centers for Disease Control and Prevention: National Influenza Surveillance (FluView):
http://www.cdc.gov/flu/weekly/fluactivitysurv.htm

The National Respiratory and Enteric Virus Surveillance System (NREVSS):
https://www.cdc.gov/surveillance/nrevss/

World Health Organization: International Influenza Surveillance:
http://www.who.int/influenza/surveillance_monitoring/en/

Missouri Weekly Influenza Surveillance Report
2019-2020 Influenza Season[1]

Week 46: November 10, 2019 – November 16, 2019

All data are preliminary and may change as more reports are received.

Summary:

- The estimated influenza activity in Missouri is Sporadic[2].

- A total of 126 laboratory-positive[3] influenza cases (56 influenza A, 68 influenza B, and two untyped) were reported during Week 46. The season-to-date total of laboratory-positive influenza cases is 852 (50.3% influenza A, 49.0% influenza B, and 0.7% untyped). No laboratory-positive cases of influenza were reported by the Missouri State Public Health Laboratory (MSPHL) during Week 46. The percentage of respiratory specimens testing positive for influenza in Missouri laboratories reporting to the National Respiratory and Enteric Virus Surveillance System (NREVSS) increased slightly but remains low during Week 46 (Figure 6).

- Influenza-like illness (ILI) activity was below baseline the Missouri Outpatient ILI Surveillance Network (ILINet) and above baseline for the hospital emergency room visit chief complaint data reported through ESSENCE. The reported percentage of visits for ILI was 1.50% (Figure 5) and 2.37% (Figure 7) through ILINet and ESSENCE respectively.[4] The ILI data from a small number of sites located in the Northwest Region of the state is currently unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

- No influenza-associated deaths have been reported in Missouri as of Week 46.[5] During Week 45, 41 deaths involving Pneumonia and Influenza (P&I) were reported to the Bureau of Vital Records, resulting in a season-to-date total of 226 P&I associated deaths in Missouri.[6]

- No influenza or ILI-associated outbreaks or school closures have been reported in Missouri as of Week 46.

- Seasonal influenza activity in the United States increased during Week 45. National influenza surveillance information is prepared by CDC and is included in the weekly FluView report, which is available online at http://www.cdc.gov/flu/weekly/fluactivitysurv.htm.

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[1]The 2019-2020 influenza season begins CDC Week 40 (week ending October 5, 2019) and ends CDC Week 39 (week ending September 26, 2020).

[2]Sporadic is defined as: Small numbers of laboratory-confirmed influenza cases or a single laboratory-confirmed influenza outbreak has been reported, but there is no increase in cases of ILI.

[3]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.

[4]Influenza-like illness (ILI) is defined by ILINet as fever (temperature of 100ºF [37.8ºC] or greater) and a cough and/or a sore throat without a known cause other than influenza. ILI is defined by ESSENCE as Emergency Department chief complaints for Influenza or (FeverPlus and (Cough or SoreThroat) and not NonILIFevers).

[5]All influenza-associated deaths became reportable in Missouri in 2016.

[6]The P&I data are available one week later. The P&I data for the CDC Week provided is the most current data available.

Surveillance Data:

Interactive Maps

The jurisdiction-specific influenza data are provided though interactive maps available at http://bit.ly/moflu19. *Click on the jurisdiction to view the influenza data specific to that jurisdiction.*

- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, CDC Week 46**
- **Reported Week-specific Rate per 100,000 Population, CDC Week 46**
- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, Season-to-Date**
- **Reported Rate per 100,000 Population, Season-to-Date**

Data Figures

Figure 1. Number of Laboratory-positive[†] Influenza Cases by Influenza Type, Missouri, CDC Week 46 (November 10, 2019 – November 16, 2019)[*]

Influenza Type	Week 44	Week 45	Week 46	2019-2020[*] Season-to-Date
Influenza A	68	71	56	429
Influenza B	70	63	68	417
Influenza Unknown Or Untyped	1	0	2	6
Total	139	134	126	852

[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv).

Figure 2. Number of Laboratory-positive[†] Influenza Cases and Case Rates by Age Group, Missouri, CDC Week 46 (November 10, 2019 – November 16, 2019)[*‡]

Age Group	Week 46 Cases	Week 46 Rate[‡]	2019-2020[*] Season-to-Date	2019-2020[*] Season-to-Date Rate[‡]
00-04	23	6.14	171	45.68
05-24	49	3.05	269	16.77
25-49	24	1.25	185	9.67
50-64	22	1.78	128	10.35
65+	8	0.84	99	10.37
Total	126	2.07	852	14.00

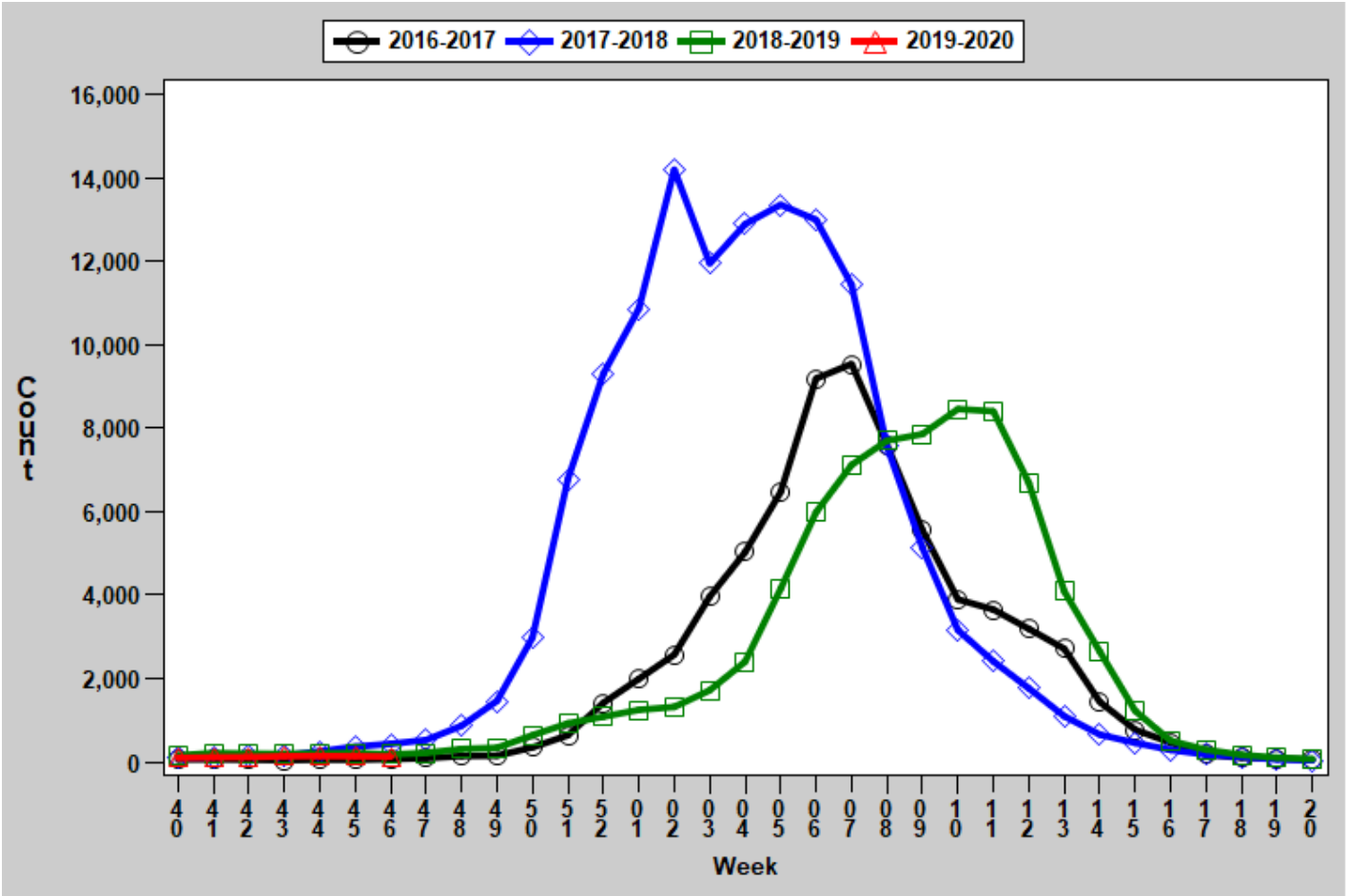
[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
[‡]Incidence Rate per 100,000 population

Figure 3. Number of Laboratory-positive[†] Influenza Cases and Case Rates by Region, Missouri, CDC Week 46 (November 10, 2019 – November 16, 2019)[*‡]

Region	Week 46 Cases	Week 46 Rate[‡]	2019-2020* Season-to-Date	2019-2020* Season-to-Date Rate[‡]
Central	18	2.66	135	19.94
Eastern	34	1.50	237	10.46
Northwest	42	2.63	119	7.45
Southeast	16	3.39	190	40.28
Southwest	16	1.49	171	15.96
Total	126	2.07	852	14.00

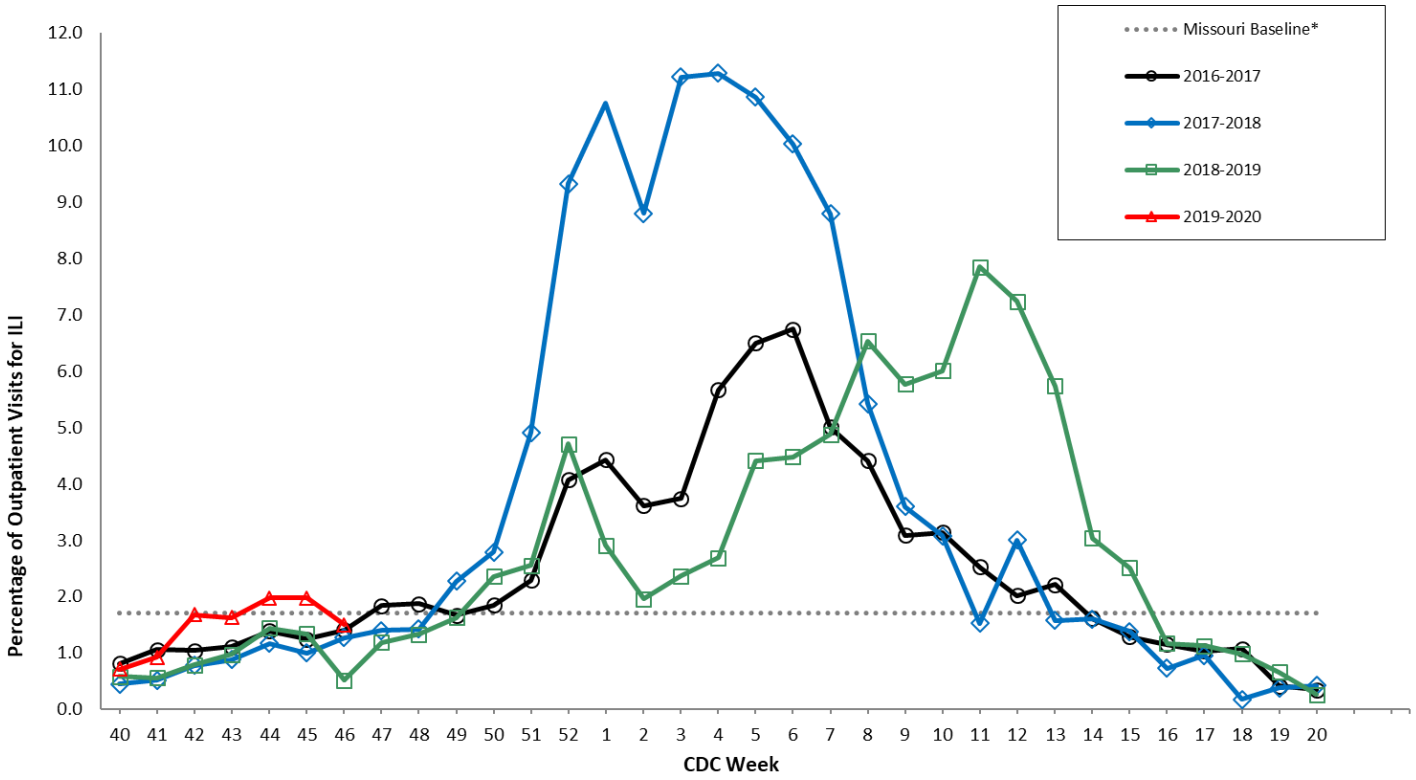
[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
[‡]Incidence Rate per 100,000 population

Figure 4. Number of Laboratory-positive[†] Influenza Cases by CDC Week, Missouri, 2016-2020[*]



[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).Data Source: Missouri Health Information Surveillance System (WebSurv).

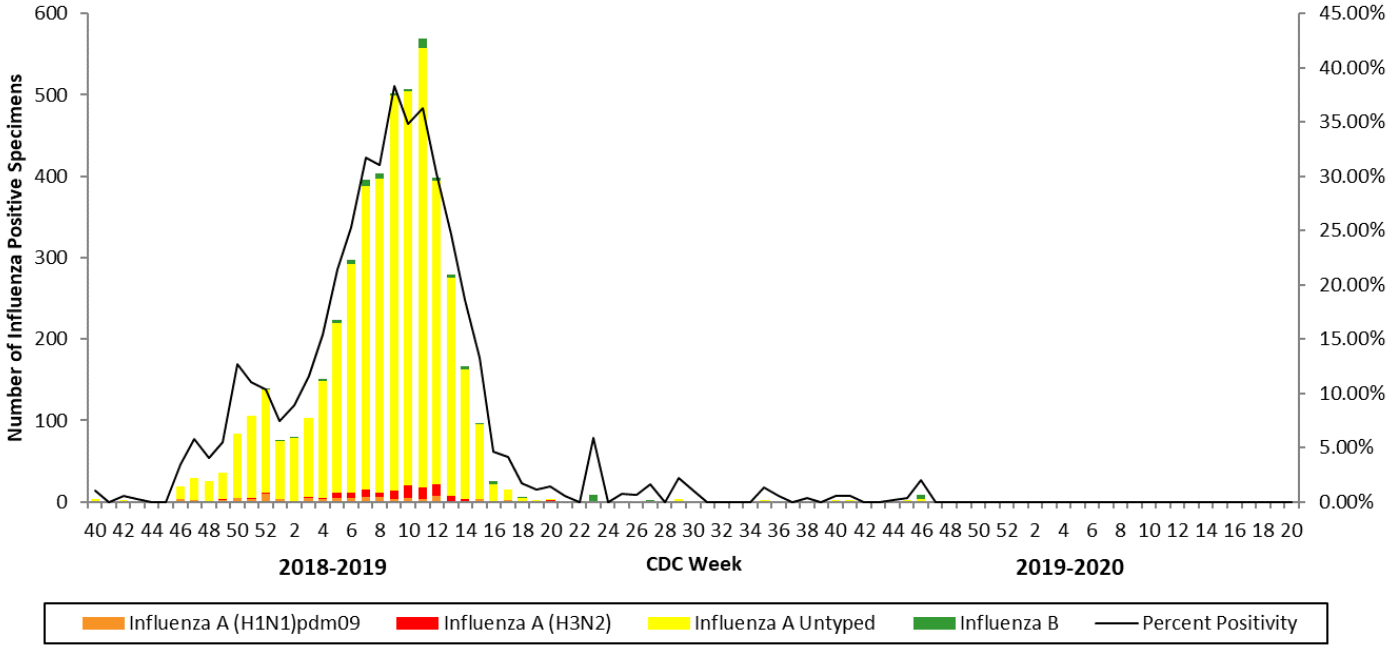
Figure 5. Percentage of Outpatient Visits for Influenza-like Illness (ILI), Missouri Outpatient ILI Surveillance Network (ILINet) 2016-2020*†



*The ILINet Region 7 (MO, IA, KS, NE) baseline is the mean percentage of patient visits for ILI during non-influenza weeks for the previous three seasons, plus two standard deviations. A non-influenza week is defined as periods of two or more consecutive weeks in which each week accounted for less than 2% of the season's total number of specimens that tested positive for influenza. Data Source: U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Centers for Disease Control and Prevention (CDC).

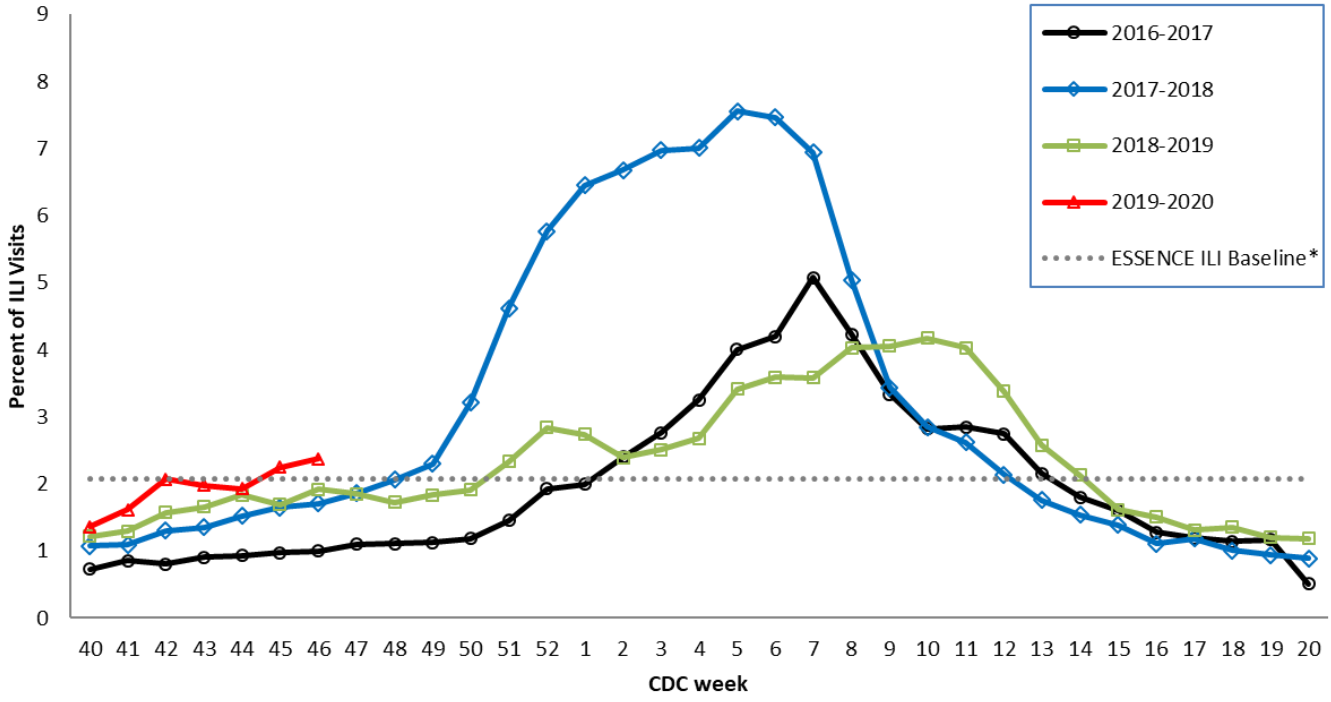
†2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).

Figure 6. Season-to-Date PCR (+) Tests for Influenza in Missouri



Data Source: National Respiratory and Enteric Virus Surveillance System (NREVSS), Centers for Disease Control and Prevention (CDC). 2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).

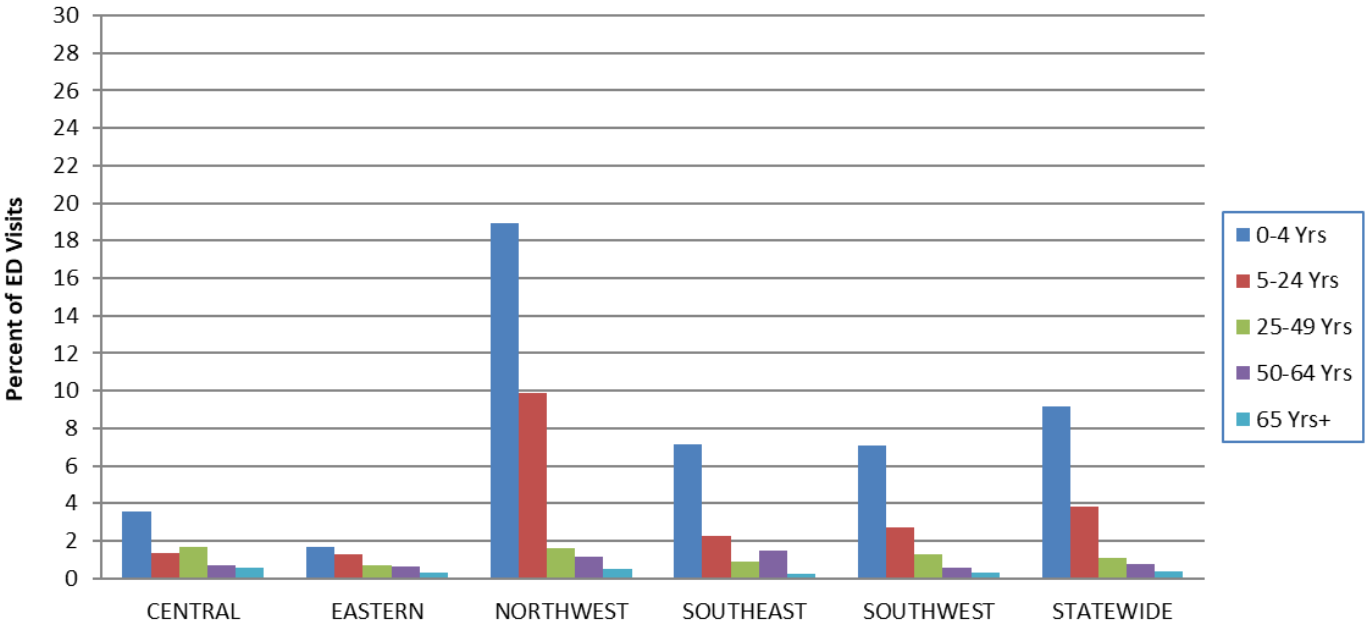
Figure 7. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, 2016-2020 Influenza Seasons*‡



*The ESSENCE ILI Baseline is the mean percent of ILI visits for each week during the previous three years (2016-18) when percentage of ILI visits were less than 2% of total visits, plus two standard deviations. Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.

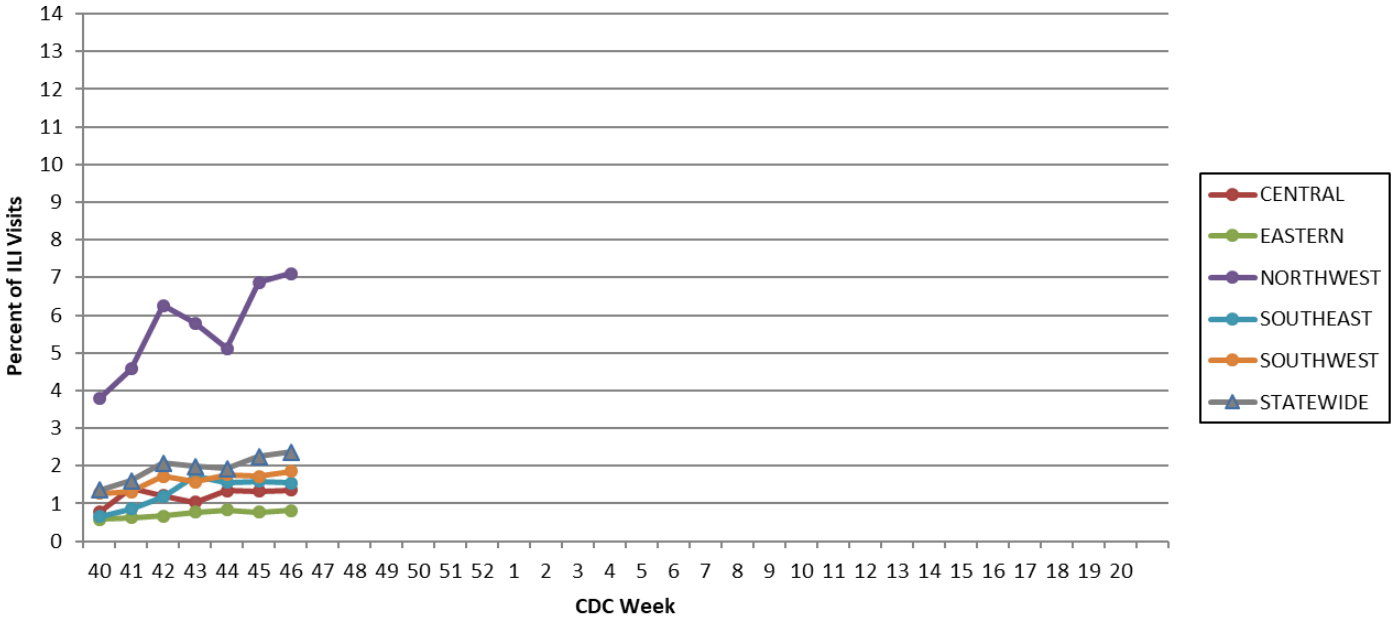
‡The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 8. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Age Group, Region and Statewide, Week 46, 2019*



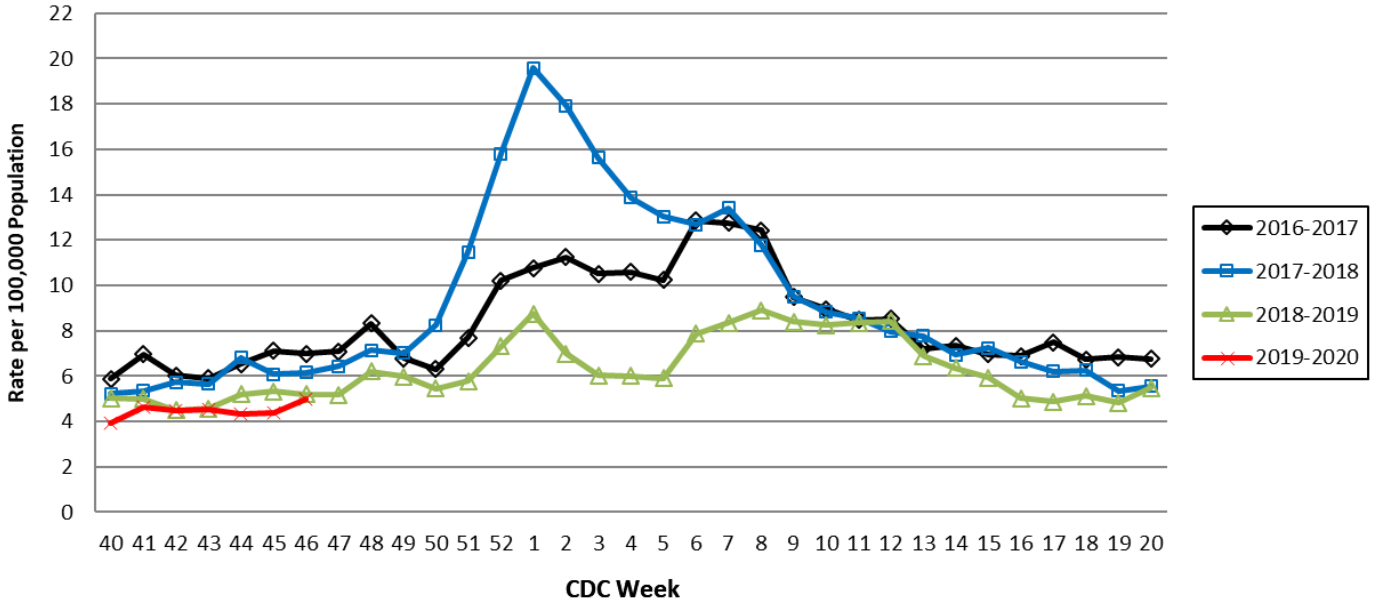
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 9. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Region and Statewide, 2019-2020 Influenza Season*



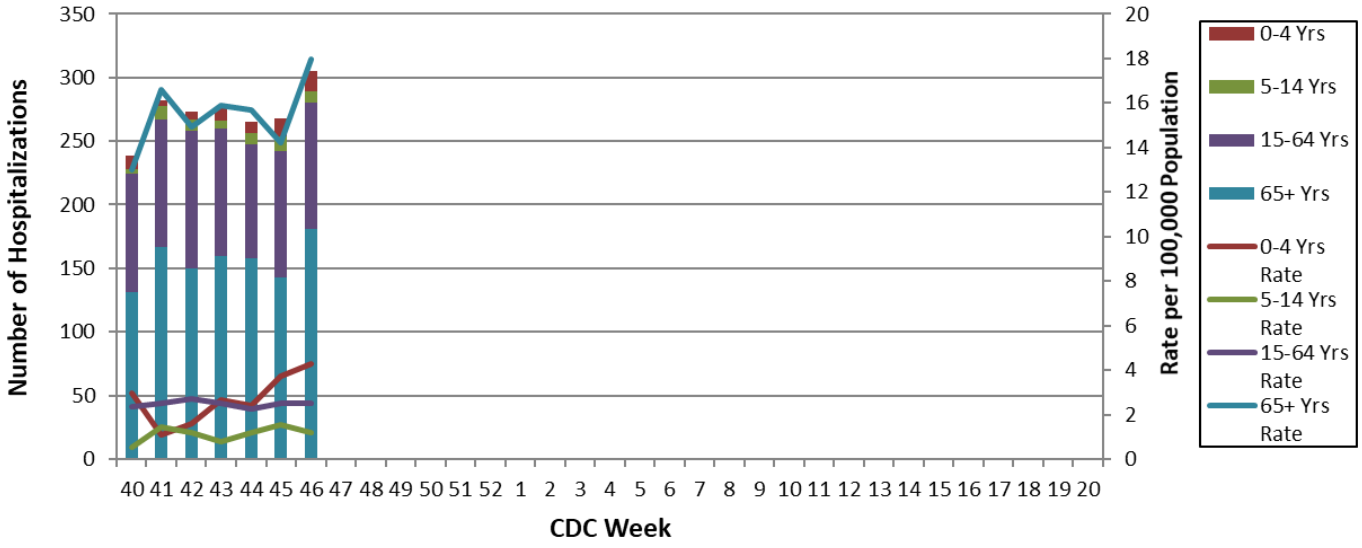
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 10. Weekly Rate of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Missouri Hospitals, 2016-2020 Influenza Seasons



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.
Population data from Missouri Census Data Center 2017 (https://census.missouri.edu).

Figure 11. Number of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Participating Missouri Hospitals, by Age Group, Week 46, 2019-2020 Influenza Season



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.

Additional Influenza Data Sources:

Centers for Disease Control and Prevention: National Influenza Surveillance (FluView):
http://www.cdc.gov/flu/weekly/fluactivitysurv.htm

The National Respiratory and Enteric Virus Surveillance System (NREVSS):
https://www.cdc.gov/surveillance/nrevss/

World Health Organization: International Influenza Surveillance:
http://www.who.int/influenza/surveillance_monitoring/en/

Missouri Weekly Influenza Surveillance Report
2019-2020 Influenza Season[1]

Week 47: November 17, 2019 – November 23, 2019

All data are preliminary and may change as more reports are received.

Summary:

- The estimated influenza activity in Missouri is Sporadic[2].

- A total of 103 laboratory-positive[3] influenza cases (58 influenza A and 45 influenza B) were reported during Week 47. The season-to-date total of laboratory-positive influenza cases is 1,083 (51.4% influenza A, 47.8% influenza B, and 0.8% untyped). No laboratory-positive cases of influenza were reported by the Missouri State Public Health Laboratory (MSPHL) during Week 47. The percentage of respiratory specimens testing positive for influenza in Missouri laboratories reporting to the National Respiratory and Enteric Virus Surveillance System (NREVSS) increased during Week 47 (Figure 6).

- Influenza-like illness (ILI) activity was below baseline the Missouri Outpatient ILI Surveillance Network (ILINet) and above baseline for the hospital emergency room visit chief complaint data reported through ESSENCE. The reported percentage of visits for ILI was 1.11% (Figure 5) and 2.57% (Figure 7) through ILINet and ESSENCE respectively.[4] The ILI data from a small number of sites located in the Northwest Region of the state is currently unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

- One influenza-associated death has been reported in Missouri as of Week 47.[5] During Week 46, 41 deaths involving Pneumonia and Influenza (P&I) were reported to the Bureau of Vital Records, resulting in a season-to-date total of 267 P&I associated deaths in Missouri.[6]

- No influenza or ILI-associated outbreaks or school closures have been reported in Missouri as of Week 47.

- Seasonal influenza activity in the United States continued to increase during Week 46. National influenza surveillance information is prepared by CDC and is included in the weekly FluView report, which is available online at http://www.cdc.gov/flu/weekly/fluactivitysurv.htm.

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[1]The 2019-2020 influenza season begins CDC Week 40 (week ending October 5, 2019) and ends CDC Week 39 (week ending September 26, 2020).

[2]Sporadic is defined as: Small numbers of laboratory-confirmed influenza cases or a single laboratory-confirmed influenza outbreak has been reported, but there is no increase in cases of ILI.

[3]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.

[4]Influenza-like illness (ILI) is defined by ILINet as fever (temperature of 100ºF [37.8ºC] or greater) and a cough and/or a sore throat without a known cause other than influenza. ILI is defined by ESSENCE as Emergency Department chief complaints for Influenza or (FeverPlus and (Cough or SoreThroat) and not NonILIFevers).

[5]All influenza-associated deaths became reportable in Missouri in 2016.

[6]The P&I data are available one week later. The P&I data for the CDC Week provided is the most current data available.

Surveillance Data:

Interactive Maps

The jurisdiction-specific influenza data are provided though interactive maps available at http://bit.ly/moflu19. *Click on the jurisdiction to view the influenza data specific to that jurisdiction.*

- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, CDC Week 47**
- **Reported Week-specific Rate per 100,000 Population, CDC Week 47**
- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, Season-to-Date**
- **Reported Rate per 100,000 Population, Season-to-Date**

Data Figures

Figure 1. Number of Laboratory-positive† Influenza Cases by Influenza Type, Missouri, CDC Week 47 (November 17, 2019 – November 23, 2019)*

Influenza Type	Week 45	Week 46	Week 47	2019-2020* Season-to-Date
Influenza A	85	87	58	557
Influenza B	71	91	45	518
Influenza Unknown Or Untyped	1	2	0	8
Total	157	180	103	1,083

†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv).

Figure 2. Number of Laboratory-positive† Influenza Cases and Case Rates by Age Group, Missouri, CDC Week 47 (November 17, 2019 – November 23, 2019)*‡

Age Group	Week 47 Cases	Week 47 Rate‡	2019-2020* Season-to-Date	2019-2020* Season-to-Date Rate‡
00-04	26	6.95	215	57.43
05-24	33	2.06	338	21.07
25-49	19	0.99	242	12.65
50-64	13	1.05	157	12.70
65+	12	1.26	131	13.72
Total	103	1.69	1,083	17.80

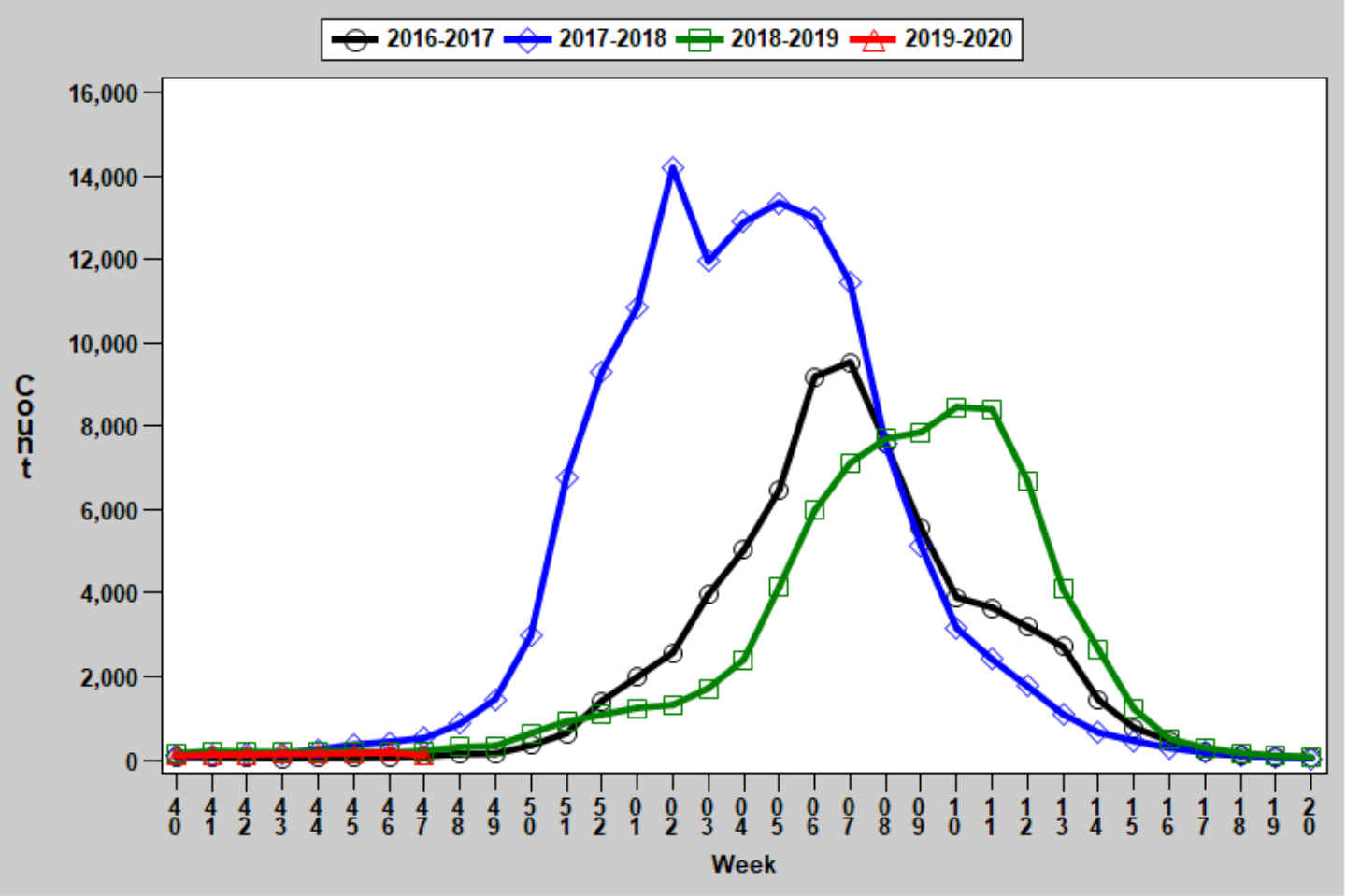
†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
‡Incidence Rate per 100,000 population

Figure 3. Number of Laboratory-positive[†] Influenza Cases and Case Rates by Region, Missouri, CDC Week 47 (November 17, 2019 – November 23, 2019)[*‡]

Region	Week 47 Cases	Week 47 Rate[‡]	2019-2020* Season-to-Date	2019-2020* Season-to-Date Rate[‡]
Central	14	2.07	158	23.34
Eastern	28	1.24	321	14.16
Northwest	21	1.31	195	12.21
Southeast	22	4.66	213	45.16
Southwest	18	1.68	196	18.30
Total	103	1.69	1,083	17.80

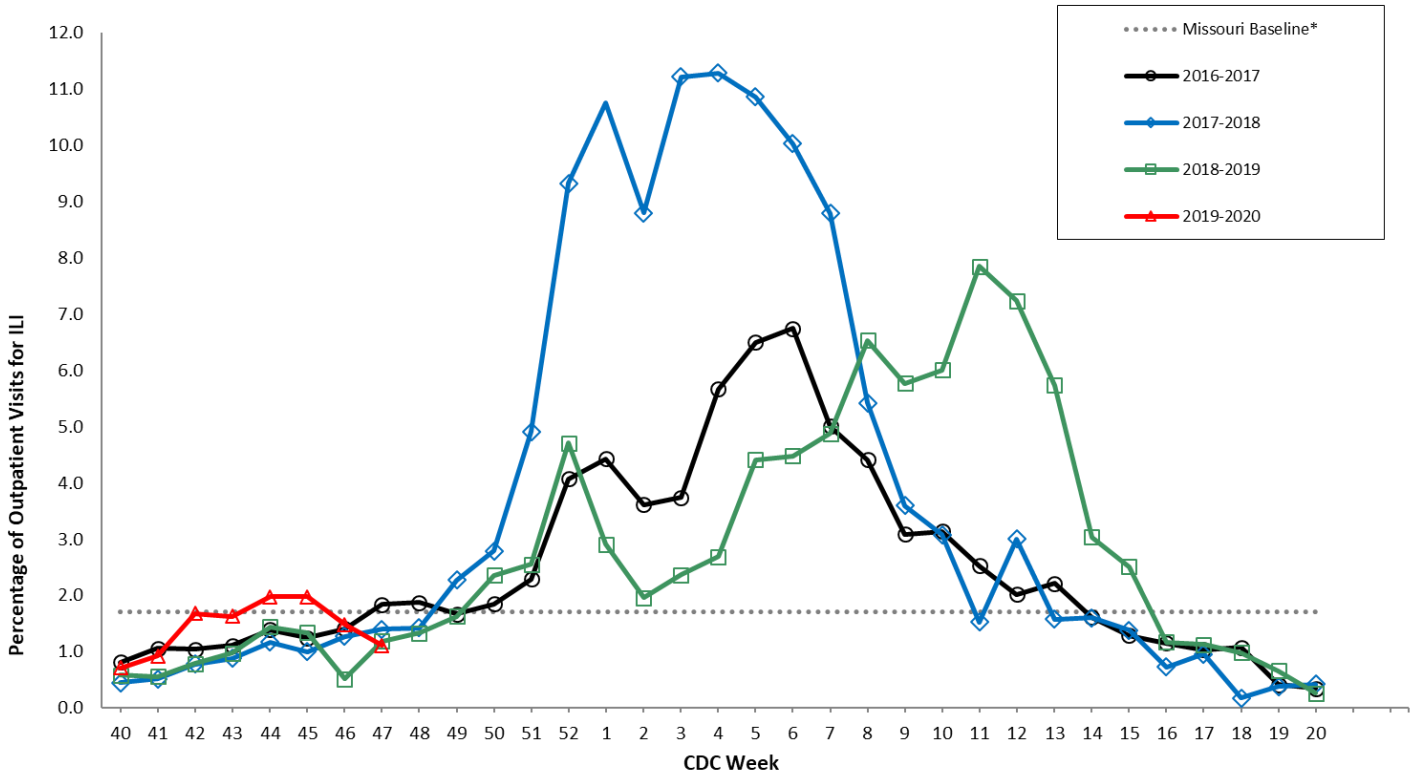
[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
[‡]Incidence Rate per 100,000 population

Figure 4. Number of Laboratory-positive[†] Influenza Cases by CDC Week, Missouri, 2016-2020[*]



[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).Data Source: Missouri Health Information Surveillance System (WebSurv).

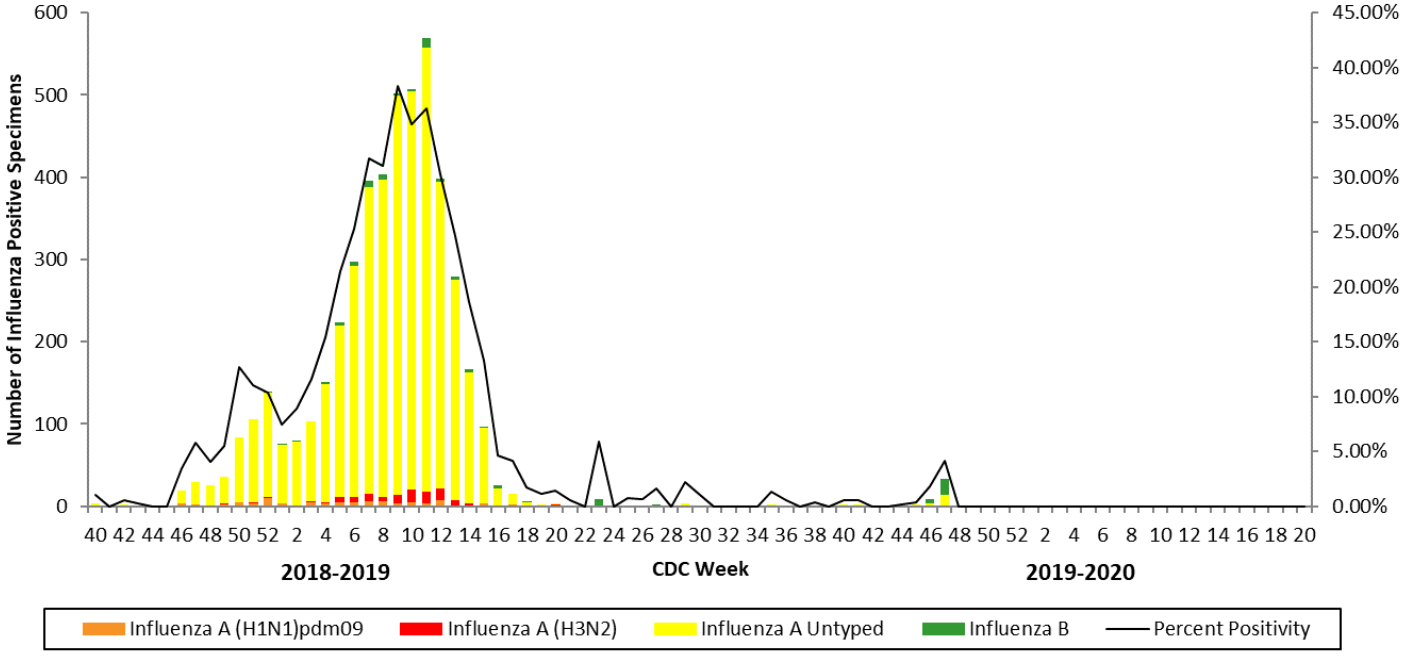
Figure 5. Percentage of Outpatient Visits for Influenza-like Illness (ILI), Missouri Outpatient ILI Surveillance Network (ILINet) 2016-2020*†



*The ILINet Region 7 (MO, IA, KS, NE) baseline is the mean percentage of patient visits for ILI during non-influenza weeks for the previous three seasons, plus two standard deviations. A non-influenza week is defined as periods of two or more consecutive weeks in which each week accounted for less than 2% of the season's total number of specimens that tested positive for influenza. Data Source: U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Centers for Disease Control and Prevention (CDC).

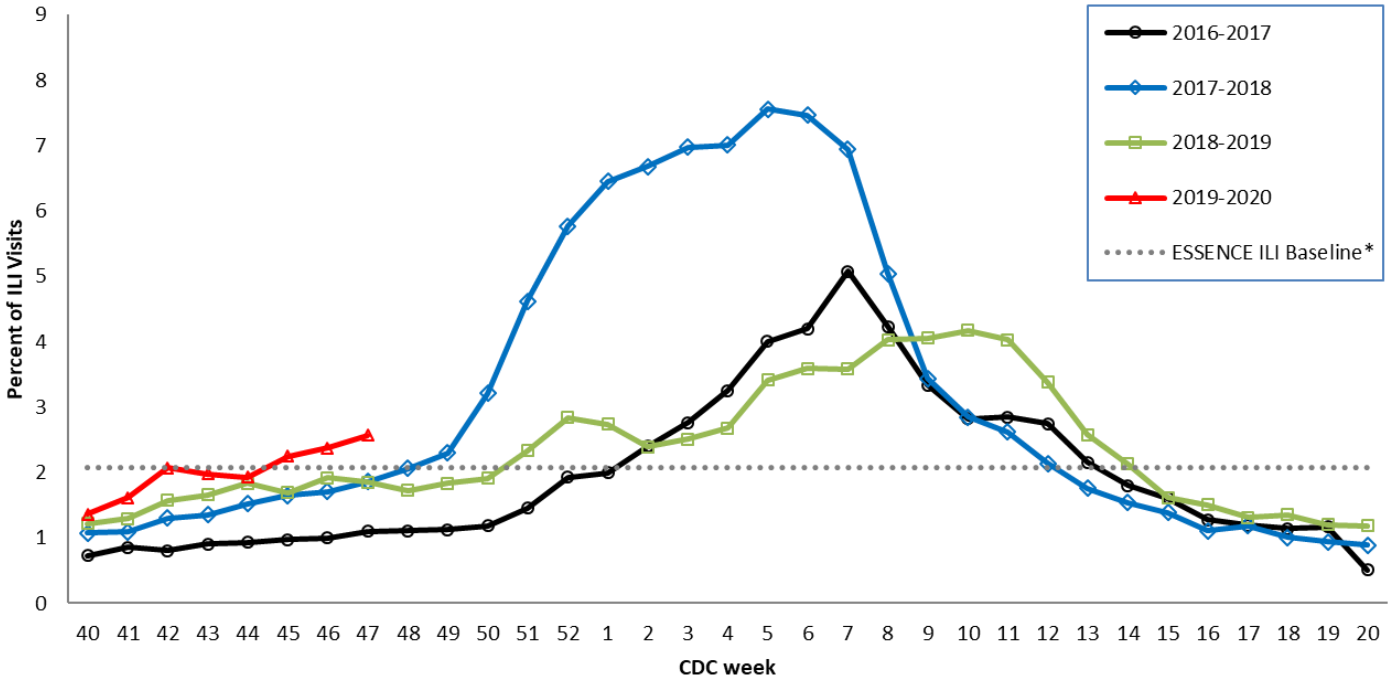
†2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).

Figure 6. Season-to-Date PCR (+) Tests for Influenza in Missouri



Data Source: National Respiratory and Enteric Virus Surveillance System (NREVSS), Centers for Disease Control and Prevention (CDC).
2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).

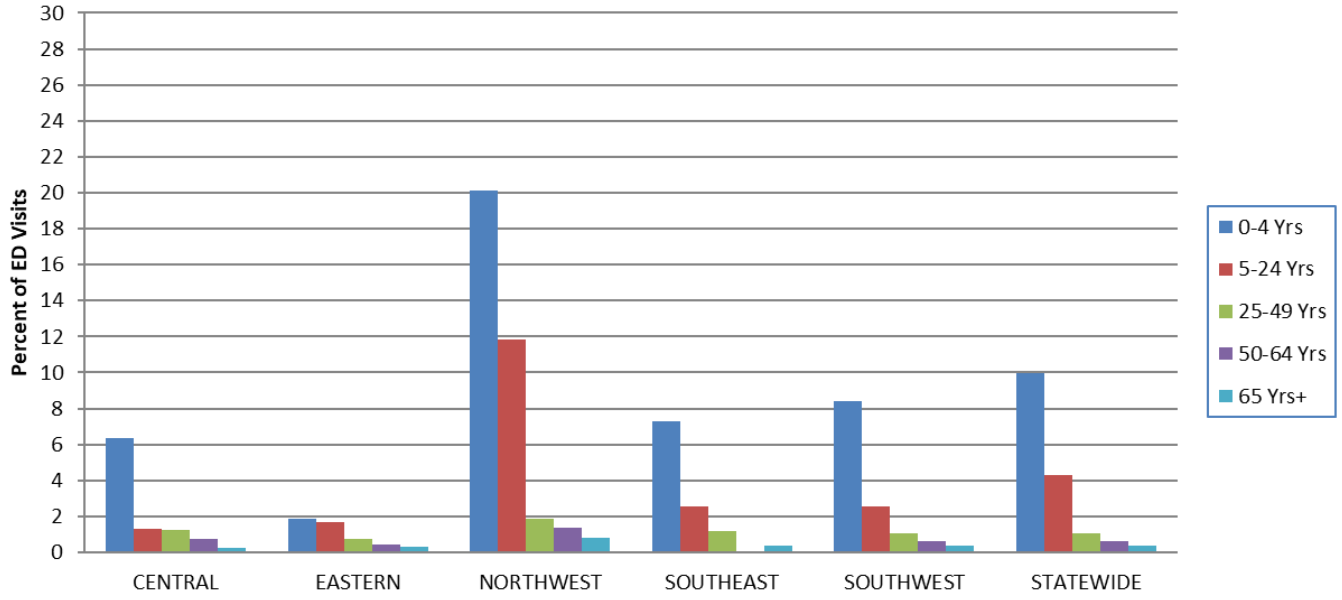
Figure 7. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, 2016-2020 Influenza Seasons*‡



*The ESSENCE ILI Baseline is the mean percent of ILI visits for each week during the previous three years (2016-18) when percentage of ILI visits were less than 2% of total visits, plus two standard deviations. Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.

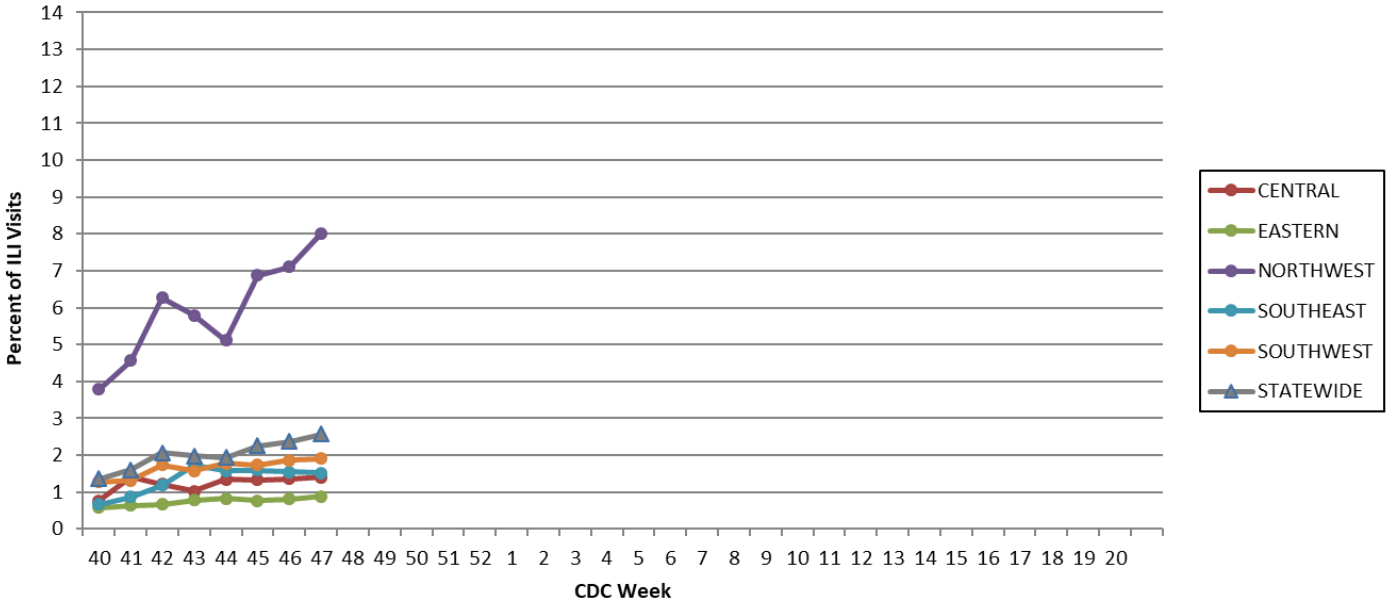
‡The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 8. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Age Group, Region and Statewide, Week 47, 2019*



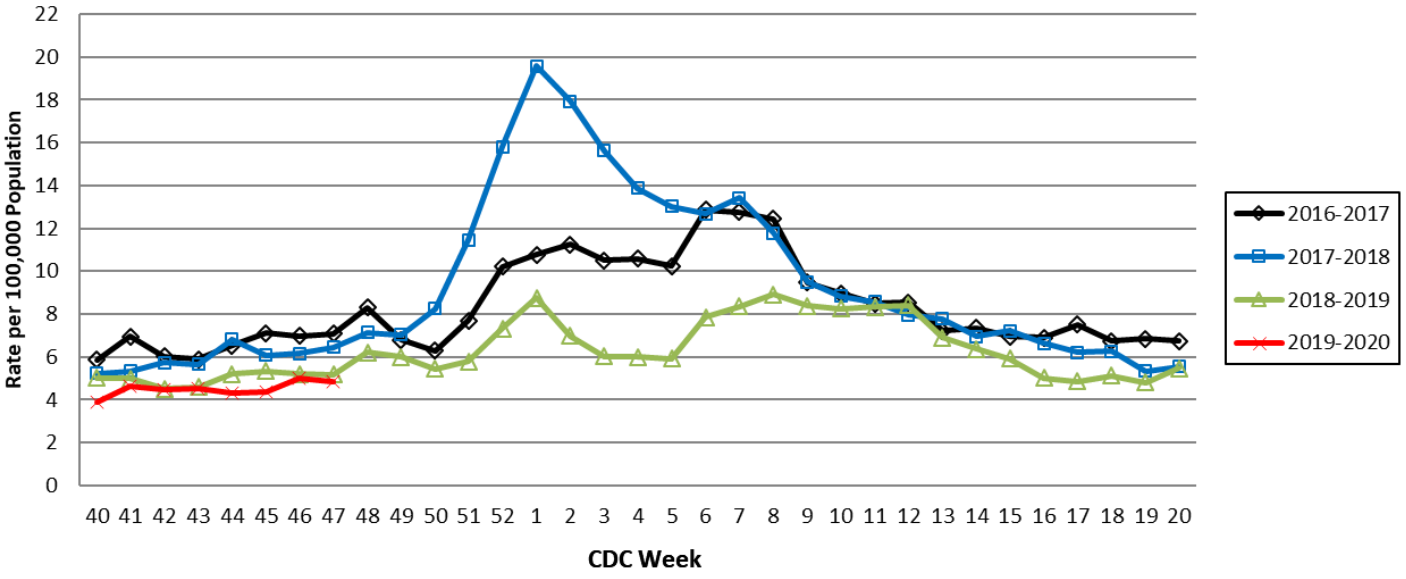
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 9. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Region and Statewide, 2019-2020 Influenza Season*



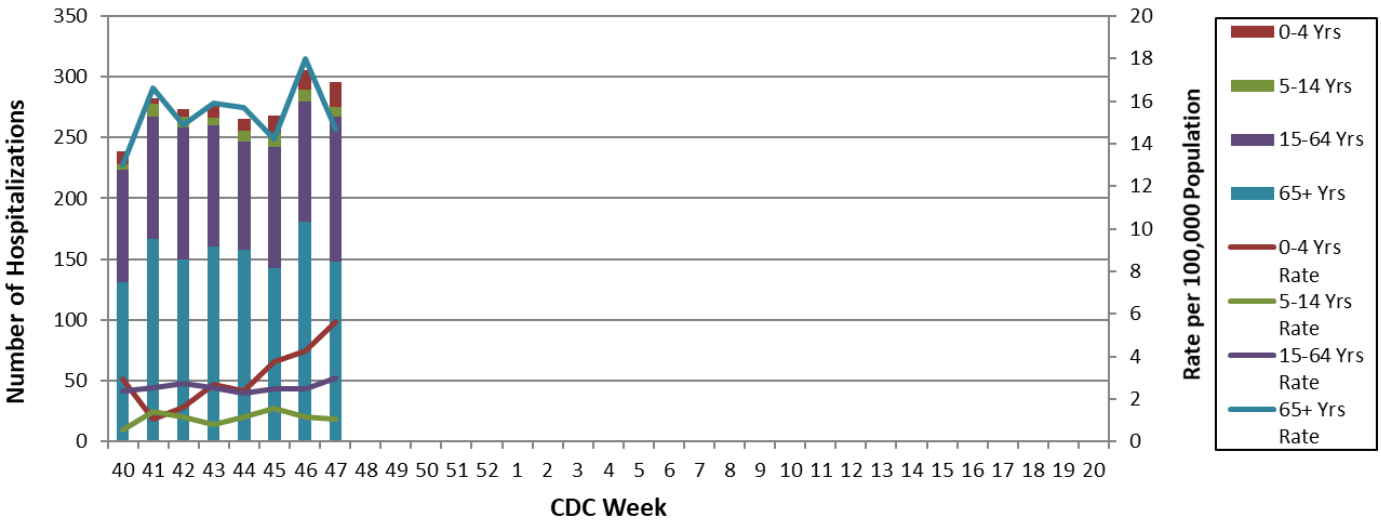
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 10. Weekly Rate of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Missouri Hospitals, 2016-2020 Influenza Seasons



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.
Population data from Missouri Census Data Center 2017 (https://census.missouri.edu).

Figure 11. Number of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Participating Missouri Hospitals, by Age Group, Week 47, 2019-2020 Influenza Season



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.

Additional Influenza Data Sources:

Centers for Disease Control and Prevention: National Influenza Surveillance (FluView):
http://www.cdc.gov/flu/weekly/fluactivitysurv.htm

The National Respiratory and Enteric Virus Surveillance System (NREVSS):
https://www.cdc.gov/surveillance/nrevss/

World Health Organization: International Influenza Surveillance:
http://www.who.int/influenza/surveillance_monitoring/en/

Missouri Weekly Influenza Surveillance Report
2019-2020 Influenza Season[1]

Week 48: November 24, 2019 – November 30, 2019

All data are preliminary and may change as more reports are received.

Summary:

- The estimated influenza activity in Missouri is Local[2].

- A total of 264 laboratory-positive[3] influenza cases (104 influenza A, 159 influenza B, and 1 untyped) were reported during Week 48. The season-to-date total of laboratory-positive influenza cases is 1,548 (49.3% influenza A, 50.1% influenza B, and 0.6% untyped). No laboratory-positive cases of influenza were reported by the Missouri State Public Health Laboratory (MSPHL) during Week 48. The percentage of respiratory specimens testing positive for influenza in Missouri laboratories reporting to the National Respiratory and Enteric Virus Surveillance System (NREVSS) continued to increase during Week 48 (Figure 6).

- Influenza-like illness (ILI) activity was above baseline for the Missouri Outpatient ILI Surveillance Network (ILINet) and for the hospital emergency room visit chief complaint data reported through ESSENCE. The reported percentage of visits for ILI was 4.31% (Figure 5) and 2.67% (Figure 7) through ILINet and ESSENCE respectively.[4] The ILI data from a small number of sites located in the Northwest Region of the state is currently unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

- Three influenza-associated deaths have been reported in Missouri as of Week 48.[5] During Week 47, 50 deaths involving Pneumonia and Influenza (P&I) were reported to the Bureau of Vital Records, resulting in a season-to-date total of 317 P&I associated deaths in Missouri.[6]

- No influenza or ILI-associated outbreaks or school closures have been reported in Missouri as of Week 48.

- Seasonal influenza activity in the United States continued to increase during Week 47. National influenza surveillance information is prepared by CDC and is included in the weekly FluView report, which is available online at http://www.cdc.gov/flu/weekly/fluactivitysurv.htm.

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[1]The 2019-2020 influenza season begins CDC Week 40 (week ending October 5, 2019) and ends CDC Week 39 (week ending September 26, 2020).

[2]Local is defined as: Outbreaks of influenza or increases in ILI cases and recent laboratory-confirmed influenza in a single region of the state.

[3]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.

[4]Influenza-like illness (ILI) is defined by ILINet as fever (temperature of 100°F [37.8°C] or greater) and a cough and/or a sore throat without a known cause other than influenza. ILI is defined by ESSENCE as Emergency Department chief complaints for Influenza or (FeverPlus and (Cough or SoreThroat) and not NonILIFevers).

[5]All influenza-associated deaths became reportable in Missouri in 2016.

[6]The P&I data are available one week later. The P&I data for the CDC Week provided is the most current data available.

Surveillance Data:

Interactive Maps

The jurisdiction-specific influenza data are provided though interactive maps available at http://bit.ly/moflu19. *Click on the jurisdiction to view the influenza data specific to that jurisdiction.*

- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, CDC Week 48**
- **Reported Week-specific Rate per 100,000 Population, CDC Week 48**
- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, Season-to-Date**
- **Reported Rate per 100,000 Population, Season-to-Date**

Data Figures

Figure 1. Number of Laboratory-positive† Influenza Cases by Influenza Type, Missouri, CDC Week 48 (November 24, 2019 – November 30, 2019)*

Influenza Type	Week 46	Week 47	Week 48	2019-2020* Season-to-Date
Influenza A	97	137	104	763
Influenza B	93	140	159	776
Influenza Unknown Or Untyped	2	0	1	9
Total	192	277	264	1,548

†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv).

Figure 2. Number of Laboratory-positive† Influenza Cases and Case Rates by Age Group, Missouri, CDC Week 48 (November 24, 2019 – November 30, 2019)*‡

Age Group	Week 48 Cases	Week 48 Rate‡	2019-2020* Season-to-Date	2019-2020* Season-to-Date Rate‡
00-04	40	10.68	285	76.13
05-24	115	7.17	548	34.15
25-49	62	3.24	350	18.29
50-64	23	1.86	199	16.10
65+	24	2.51	166	17.38
Total	264	4.34	1,548	25.45

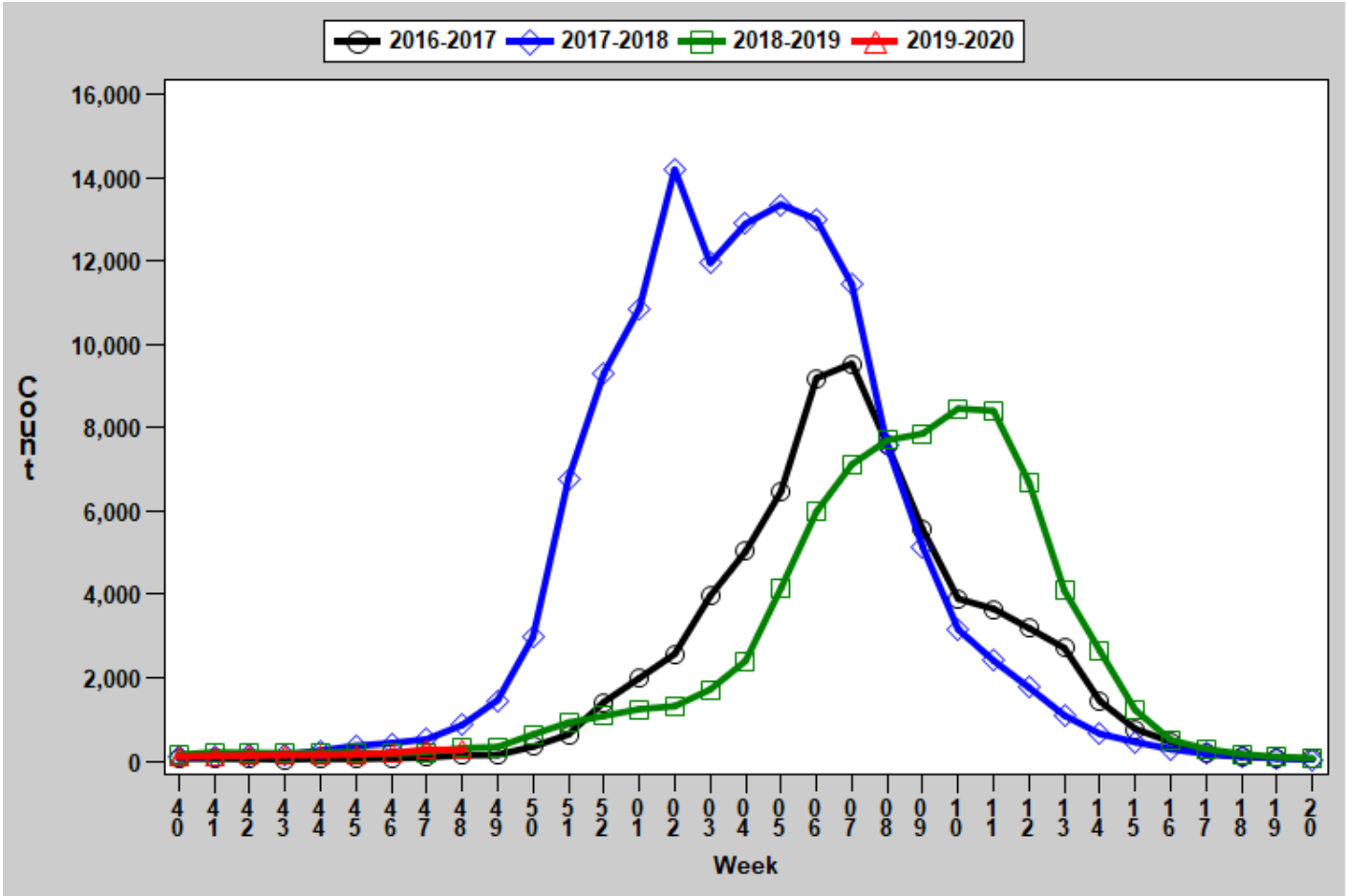
†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
‡Incidence Rate per 100,000 population

Figure 3. Number of Laboratory-positive[†] Influenza Cases and Case Rates by Region, Missouri, CDC Week 48 (November 24, 2019 – November 30, 2019)[*‡]

Region	Week 48 Cases	Week 48 Rate[‡]	2019-2020* Season-to-Date	2019-2020* Season-to-Date Rate[‡]
Central	28	4.14	206	30.43
Eastern	63	2.78	412	18.18
Northwest	107	6.70	384	24.04
Southeast	26	5.51	283	60.00
Southwest	40	3.73	263	24.55
Total	264	4.34	1,548	25.45

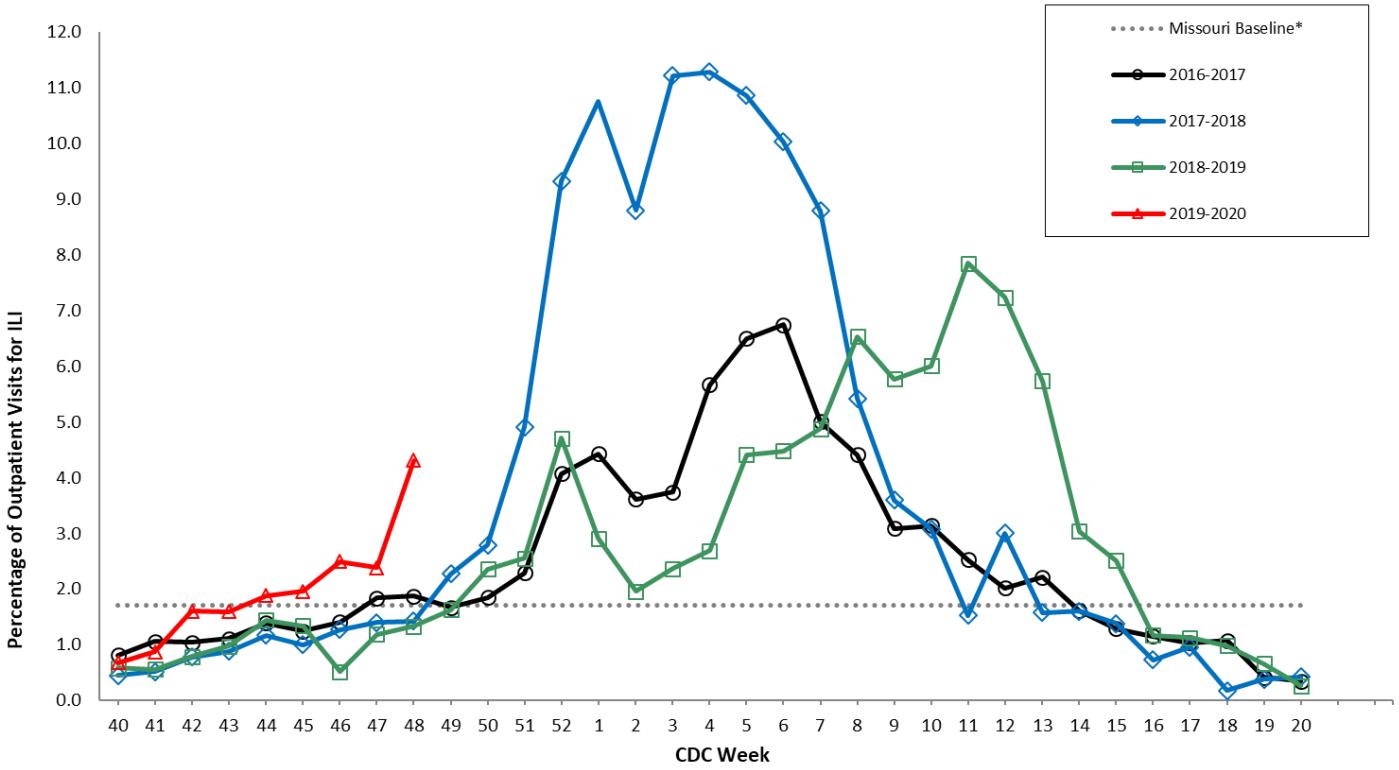
[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
[‡]Incidence Rate per 100,000 population

Figure 4. Number of Laboratory-positive[†] Influenza Cases by CDC Week, Missouri, 2016-2020[*]



[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).Data Source: Missouri Health Information Surveillance System (WebSurv).

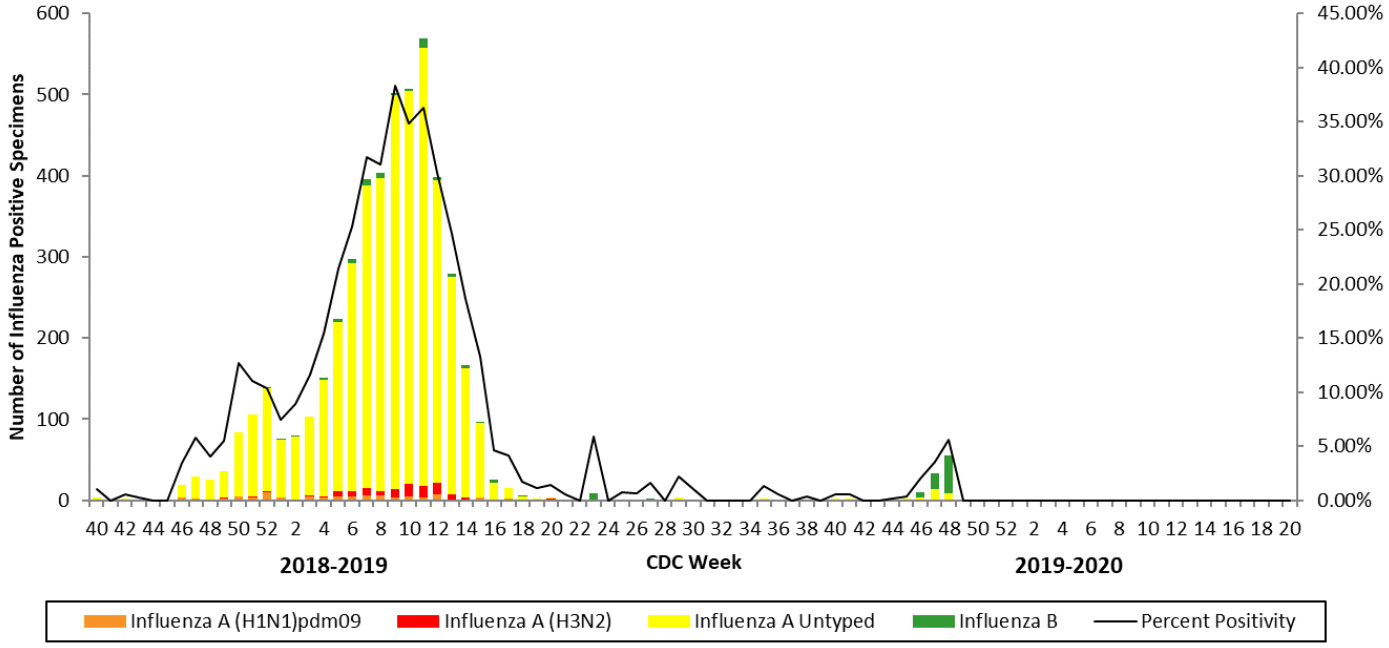
Figure 5. Percentage of Outpatient Visits for Influenza-like Illness (ILI), Missouri Outpatient ILI Surveillance Network (ILINet) 2016-2020*†



*The ILINet Region 7 (MO, IA, KS, NE) baseline is the mean percentage of patient visits for ILI during non-influenza weeks for the previous three seasons, plus two standard deviations. A non-influenza week is defined as periods of two or more consecutive weeks in which each week accounted for less than 2% of the season's total number of specimens that tested positive for influenza. Data Source: U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Centers for Disease Control and Prevention (CDC).

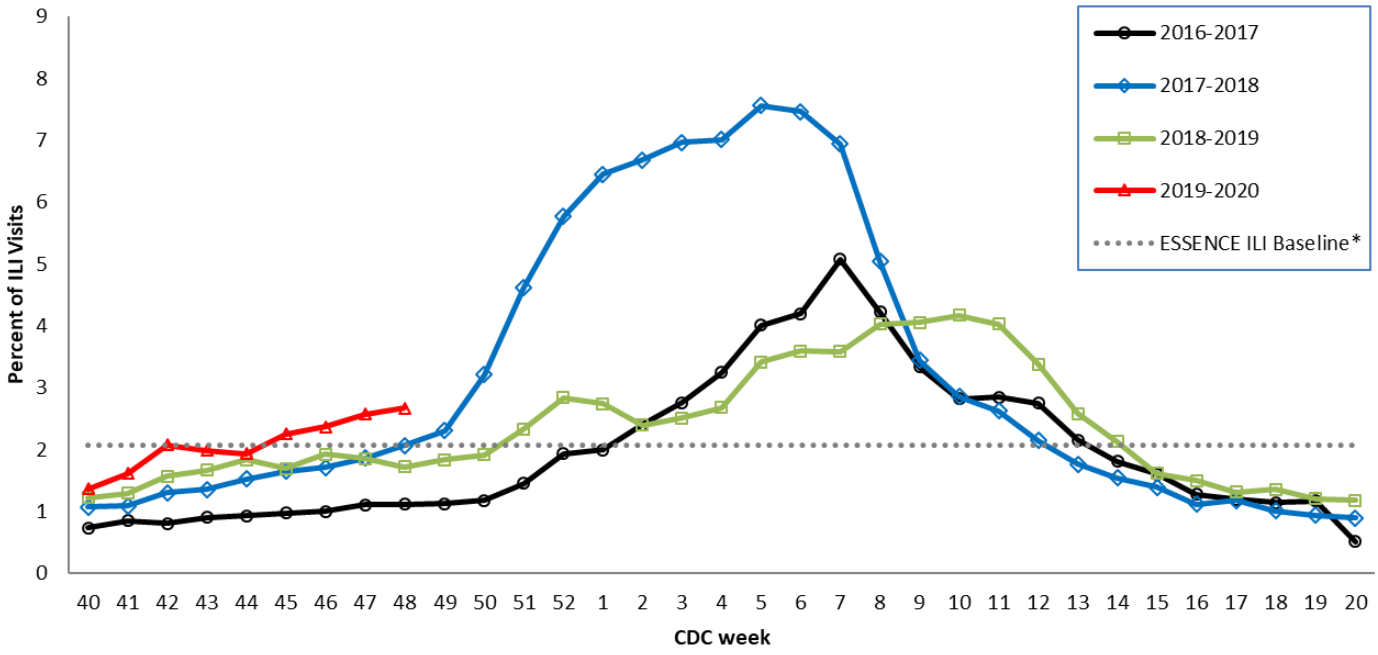
†2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).

Figure 6. Season-to-Date PCR (+) Tests for Influenza in Missouri



Data Source: National Respiratory and Enteric Virus Surveillance System (NREVSS), Centers for Disease Control and Prevention (CDC).
2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).

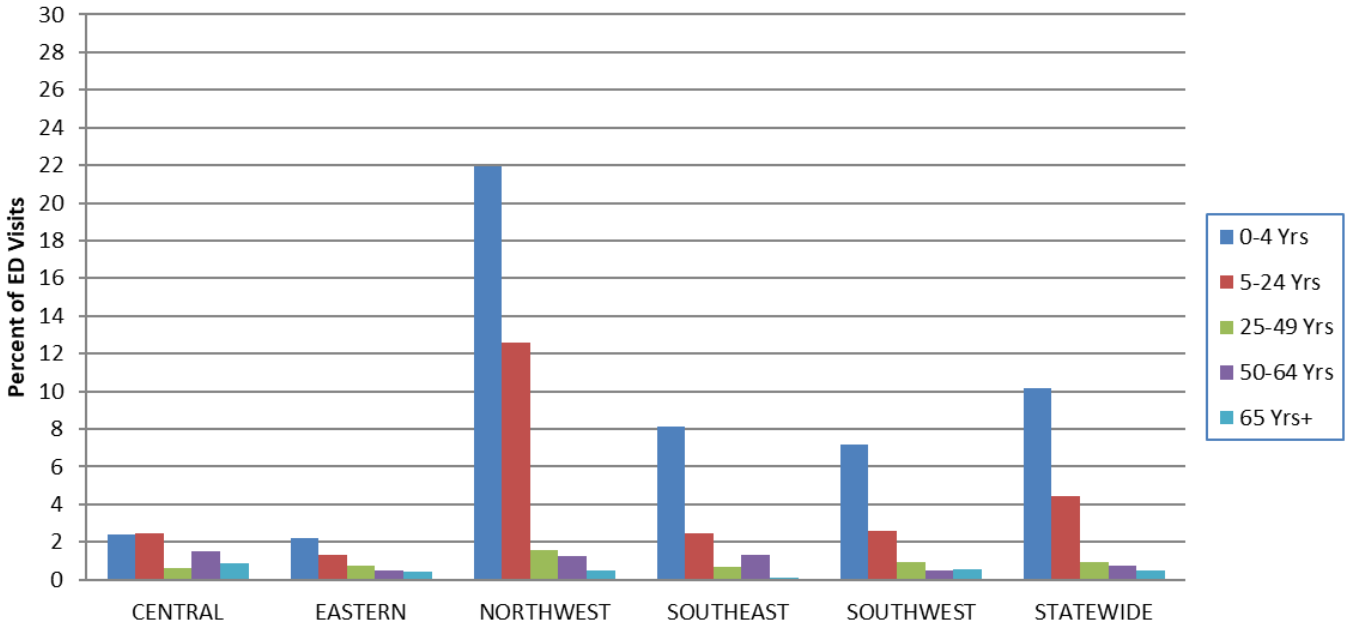
Figure 7. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, 2016-2020 Influenza Seasons*‡



*The ESSENCE ILI Baseline is the mean percent of ILI visits for each week during the previous three years (2016-18) when percentage of ILI visits were less than 2% of total visits, plus two standard deviations. Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.

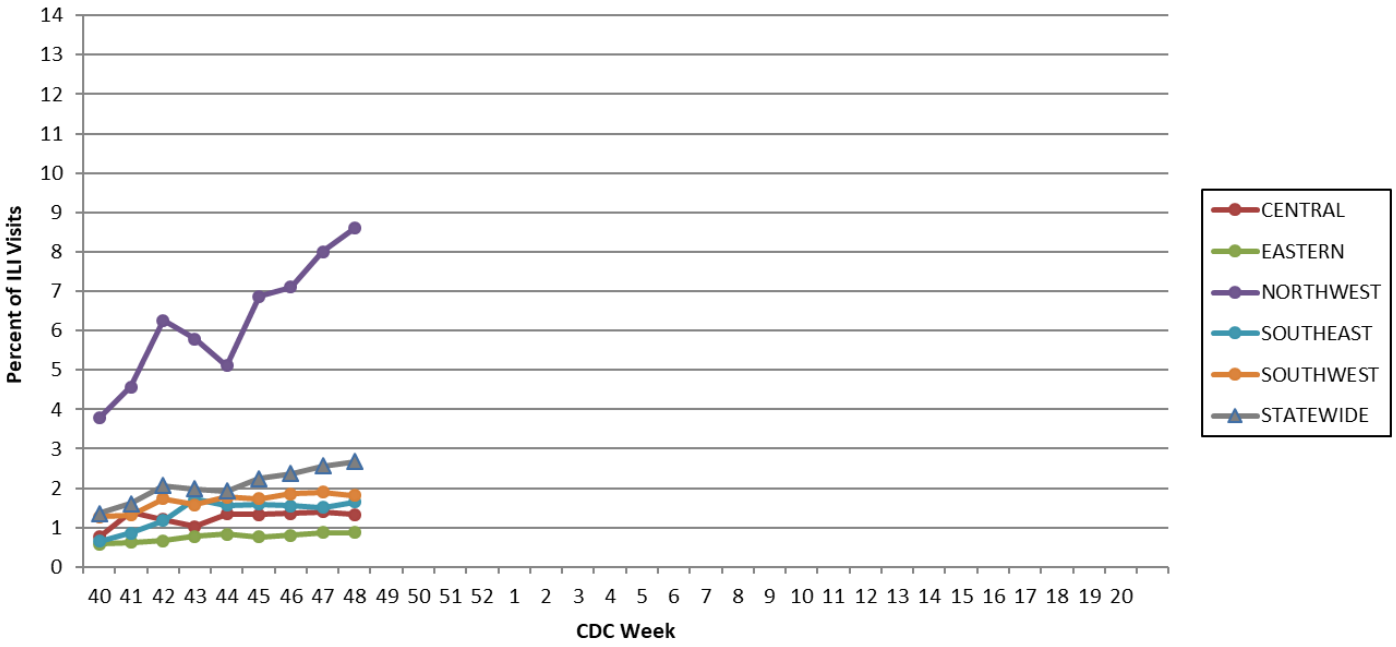
‡The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 8. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Age Group, Region and Statewide, Week 48, 2019*



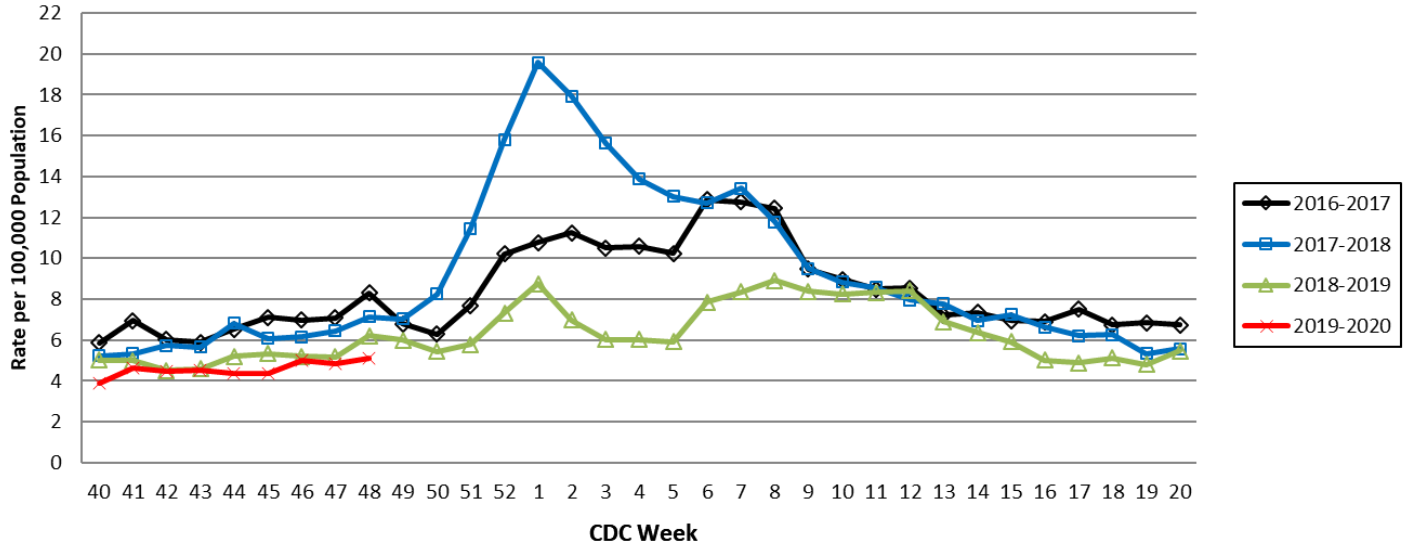
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 9. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Region and Statewide, 2019-2020 Influenza Season*



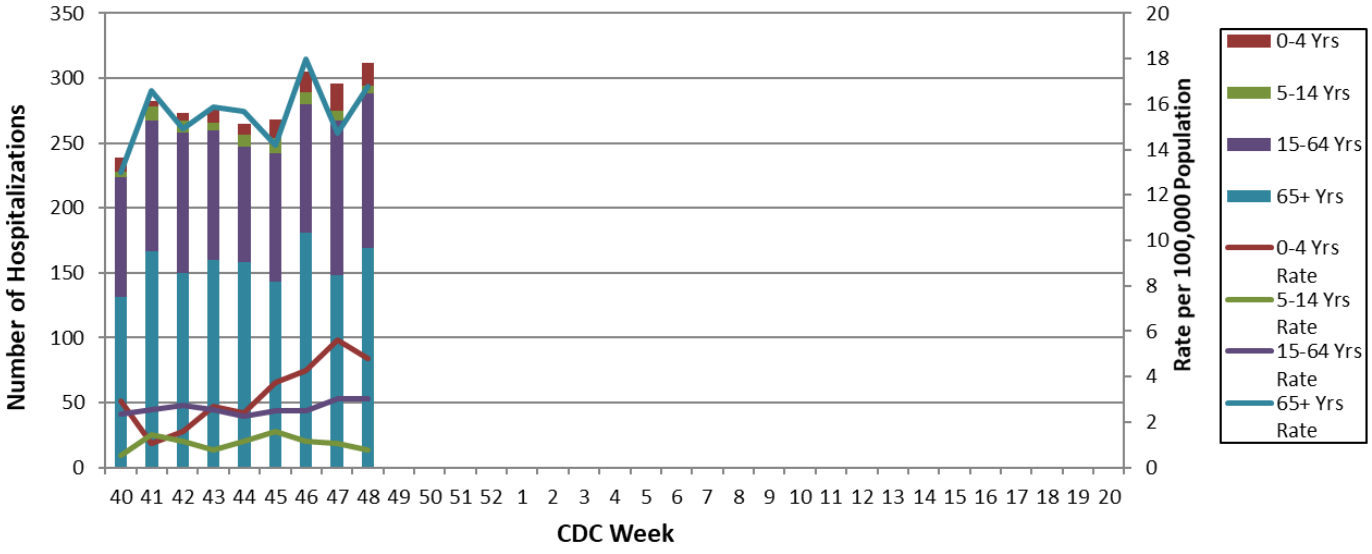
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 10. Weekly Rate of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Missouri Hospitals, 2016-2020 Influenza Seasons



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.
Population data from Missouri Census Data Center 2017 (https://census.missouri.edu).

Figure 11. Number of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Participating Missouri Hospitals, by Age Group, Week 48, 2019-2020 Influenza Season



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.

Additional Influenza Data Sources:

Centers for Disease Control and Prevention: National Influenza Surveillance (FluView):
http://www.cdc.gov/flu/weekly/fluactivitysurv.htm

The National Respiratory and Enteric Virus Surveillance System (NREVSS):
https://www.cdc.gov/surveillance/nrevss/

World Health Organization: International Influenza Surveillance:
http://www.who.int/influenza/surveillance_monitoring/en/

Missouri Weekly Influenza Surveillance Report 2019-2020 Influenza Season[1]

Week 49: December 1, 2019 – December 7, 2019

All data are preliminary and may change as more reports are received.

Summary:

- The estimated influenza activity in Missouri is Local[2].
- A total of 485 laboratory-positive[3] influenza cases (158 influenza A, 323 influenza B, and 4 untyped) were reported during Week 49. The season-to-date total of laboratory-positive influenza cases is 2,202 (44.2% influenza A, 55.2% influenza B, and 0.6% untyped). No laboratory-positive cases of influenza were reported by the Missouri State Public Health Laboratory (MSPHL) during Week 49. The percentage of respiratory specimens testing positive for influenza in Missouri laboratories reporting to the National Respiratory and Enteric Virus Surveillance System (NREVSS) decreased during Week 49 (Figure 6).
- Influenza-like illness (ILI) activity was above baseline for the Missouri Outpatient ILI Surveillance Network (ILINet) and for the hospital emergency room visit chief complaint data reported through ESSENCE. The reported percentage of visits for ILI was 2.80% (Figure 5) and 2.8% (Figure 7) through ILINet and ESSENCE respectively.[4] The ILI data from a small number of sites located in the Northwest Region of the state is currently unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.
- Four influenza-associated deaths have been reported in Missouri as of Week 49.[5] During Week 48, 29 deaths involving Pneumonia and Influenza (P&I) were reported to the Bureau of Vital Records, resulting in a season-to-date total of 346 P&I associated deaths in Missouri.[6]
- No influenza or ILI-associated outbreaks or school closures have been reported in Missouri as of Week 49.
- Seasonal influenza activity in the United States continued to increase during Week 48. National influenza surveillance information is prepared by CDC and is included in the weekly FluView report, which is available online at http://www.cdc.gov/flu/weekly/fluactivitysurv.htm.

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[1]The 2019-2020 influenza season begins CDC Week 40 (week ending October 5, 2019) and ends CDC Week 39 (week ending September 26, 2020).

[2]Local is defined as: Outbreaks of influenza or increases in ILI cases and recent laboratory-confirmed influenza in a single region of the state.

[3]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.

[4]Influenza-like illness (ILI) is defined by ILINet as fever (temperature of 100°F [37.8°C] or greater) and a cough and/or a sore throat without a known cause other than influenza. ILI is defined by ESSENCE as Emergency Department chief complaints for Influenza or (FeverPlus and (Cough or SoreThroat) and not NonILIFevers).

[5]All influenza-associated deaths became reportable in Missouri in 2016.

[6]The P&I data are available one week later. The P&I data for the CDC Week provided is the most current data available.

Surveillance Data:

Interactive Maps

The jurisdiction-specific influenza data are provided though interactive maps available at http://bit.ly/moflu19. *Click on the jurisdiction to view the influenza data specific to that jurisdiction.*

- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, CDC Week 49**
- **Reported Week-specific Rate per 100,000 Population, CDC Week 49**
- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, Season-to-Date**
- **Reported Rate per 100,000 Population, Season-to-Date**

Data Figures

Figure 1. Number of Laboratory-positive† Influenza Cases by Influenza Type, Missouri, CDC Week 49 (December 1, 2019 – December 7, 2019)*

Influenza Type	Week 47	Week 48	Week 49	2019-2020* Season-to-Date
Influenza A	150	136	158	973
Influenza B	163	244	323	1,216
Influenza Unknown Or Untyped	0	1	4	13
Total	313	381	485	2,202

†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv).

Figure 2. Number of Laboratory-positive† Influenza Cases and Case Rates by Age Group, Missouri, CDC Week 49 (December 1, 2019 – December 7, 2019)*‡

Age Group	Week 49 Cases	Week 49 Rate‡	2019-2020* Season-to-Date	2019-2020* Season-to-Date Rate‡
00-04	98	26.18	407	108.72
05-24	199	12.40	838	52.23
25-49	115	6.01	497	25.97
50-64	43	3.48	256	20.71
65+	30	3.14	204	21.36
Total	485	7.97	2,202	36.20

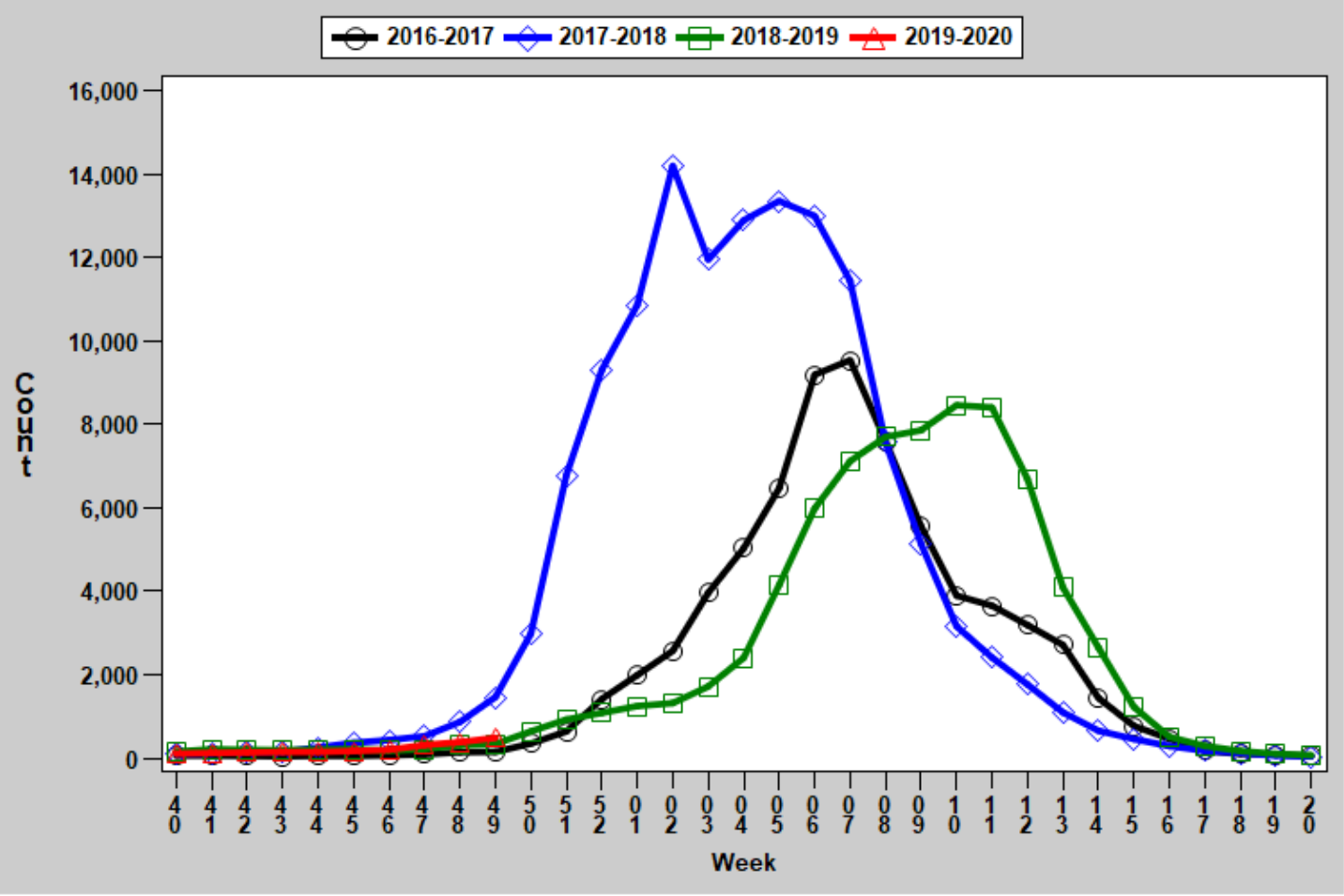
†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
‡Incidence Rate per 100,000 population

Figure 3. Number of Laboratory-positive[†] Influenza Cases and Case Rates by Region, Missouri, CDC Week 49 (December 1, 2019 – December 7, 2019)[*‡]

Region	Week 49 Cases	Week 49 Rate[‡]	2019-2020* Season-to-Date	2019-2020* Season-to-Date Rate[‡]
Central	101	14.92	326	48.15
Eastern	60	2.65	500	22.06
Northwest	237	14.84	731	45.76
Southeast	29	6.15	312	66.14
Southwest	58	5.41	333	31.08
Total	485	7.97	2,202	36.20

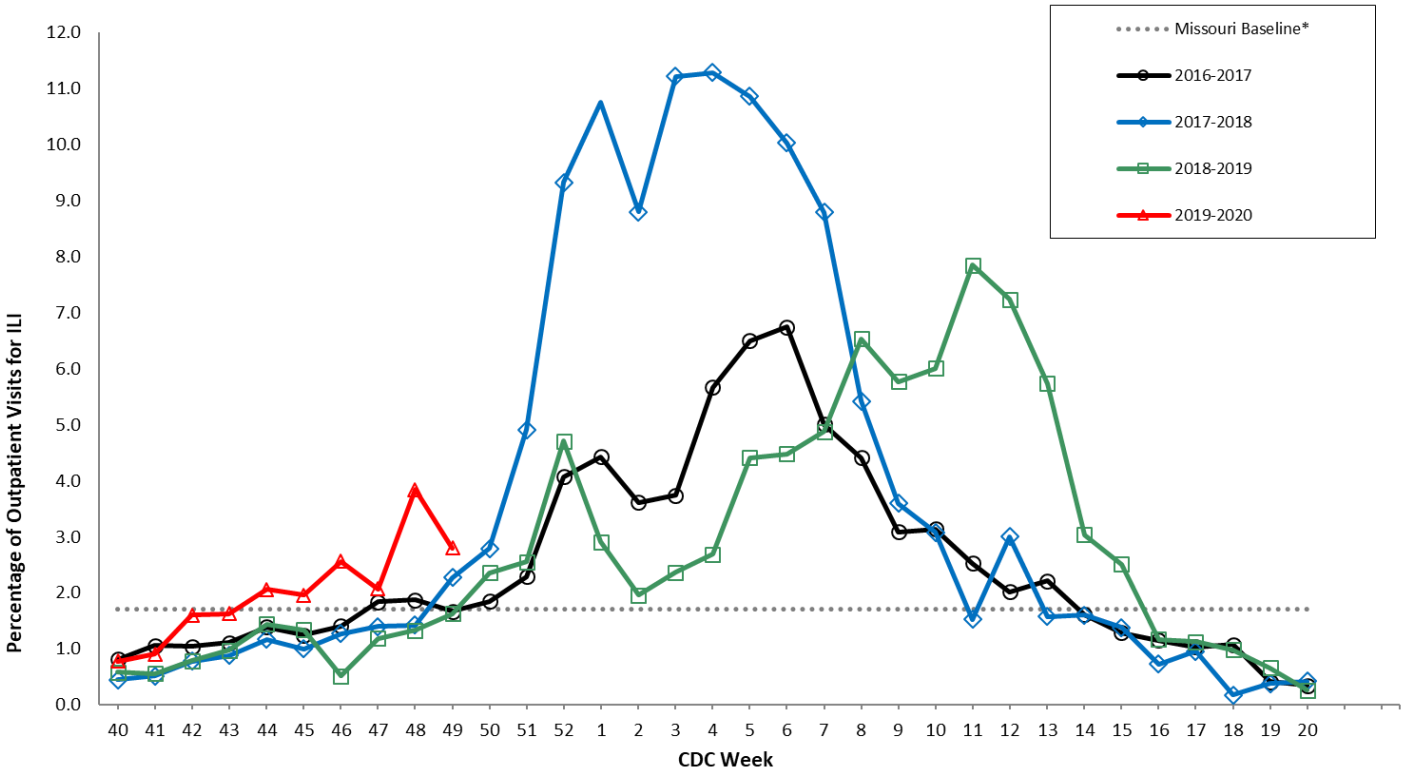
[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
[‡]Incidence Rate per 100,000 population

Figure 4. Number of Laboratory-positive[†] Influenza Cases by CDC Week, Missouri, 2016-2020[*]



[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).Data Source: Missouri Health Information Surveillance System (WebSurv).

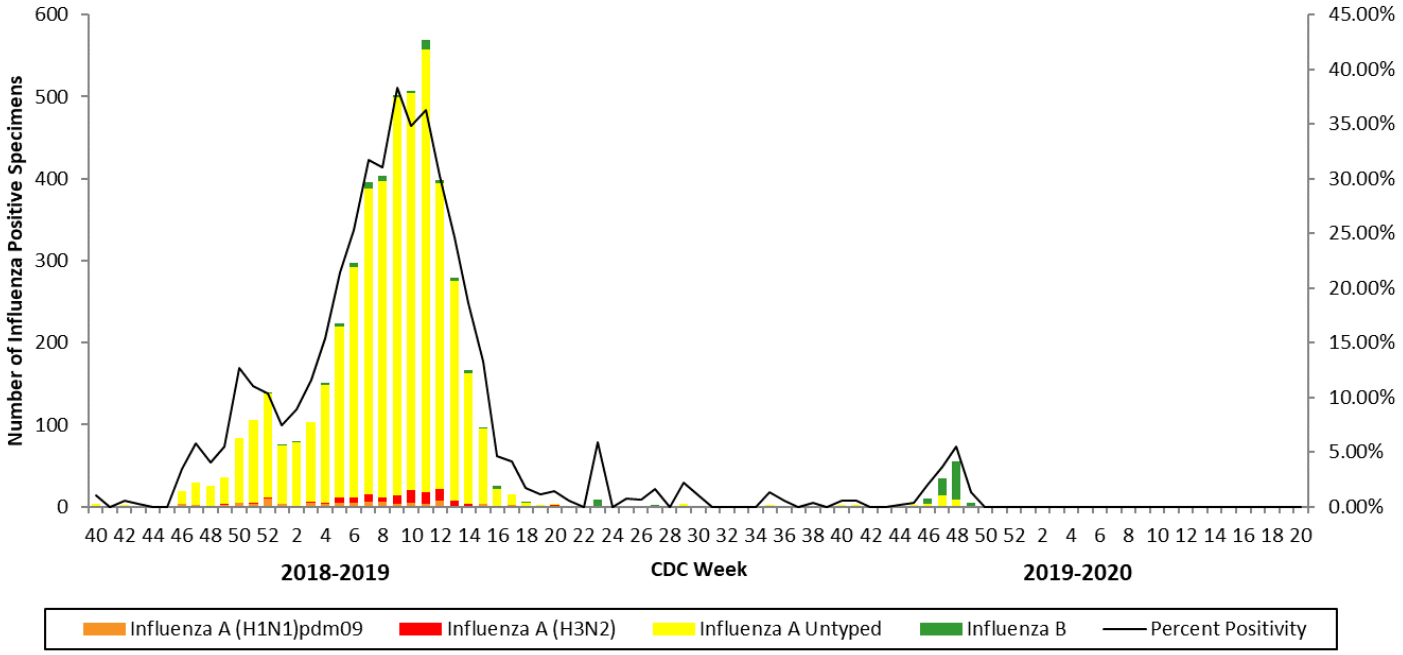
Figure 5. Percentage of Outpatient Visits for Influenza-like Illness (ILI), Missouri Outpatient ILI Surveillance Network (ILINet) 2016-2020*†



*The ILINet Region 7 (MO, IA, KS, NE) baseline is the mean percentage of patient visits for ILI during non-influenza weeks for the previous three seasons, plus two standard deviations. A non-influenza week is defined as periods of two or more consecutive weeks in which each week accounted for less than 2% of the season's total number of specimens that tested positive for influenza. Data Source: U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Centers for Disease Control and Prevention (CDC).

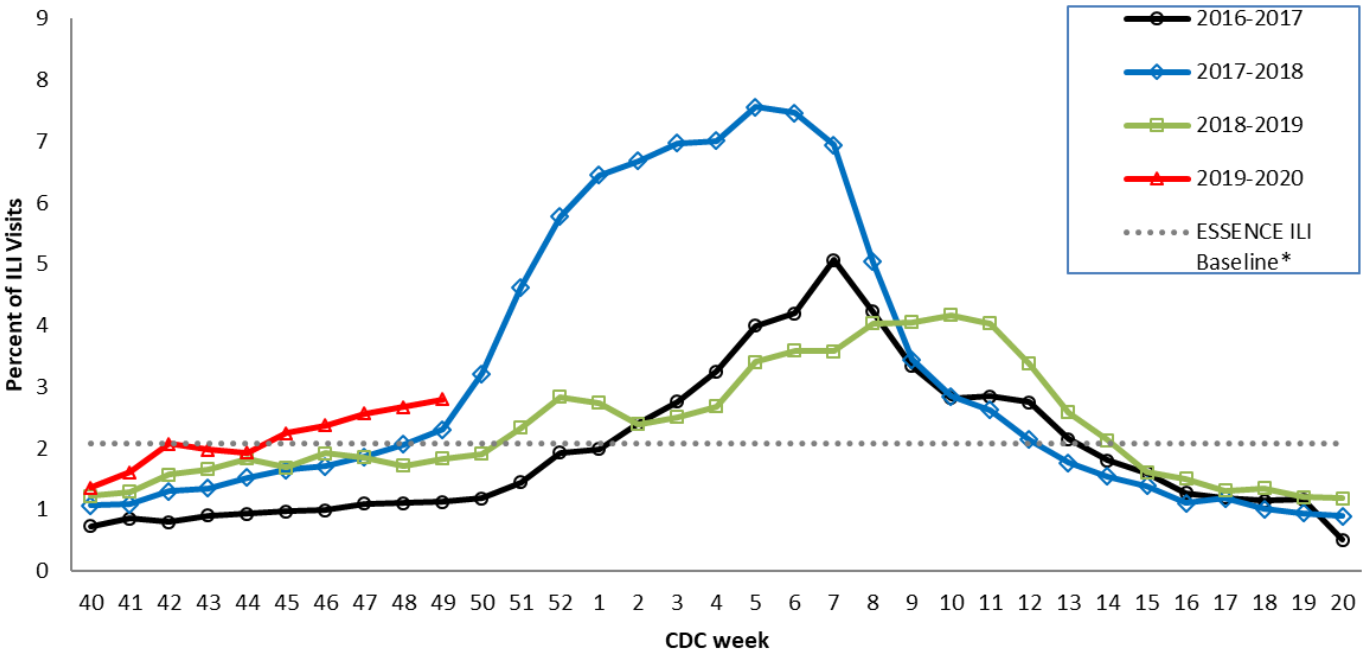
†2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).

Figure 6. Season-to-Date PCR (+) Tests for Influenza in Missouri



Data Source: National Respiratory and Enteric Virus Surveillance System (NREVSS), Centers for Disease Control and Prevention (CDC).
2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).

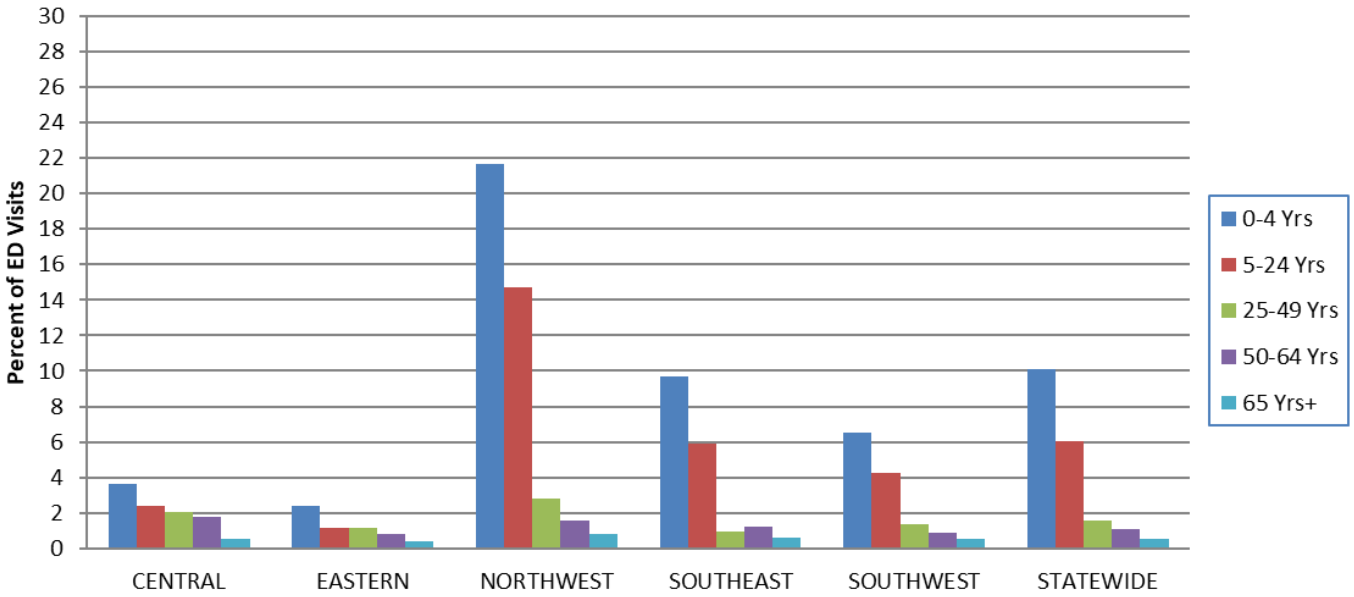
Figure 7. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, 2016-2020 Influenza Seasons*‡



*The ESSENCE ILI Baseline is the mean percent of ILI visits for each week during the previous three years (2016-18) when percentage of ILI visits were less than 2% of total visits, plus two standard deviations. Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.

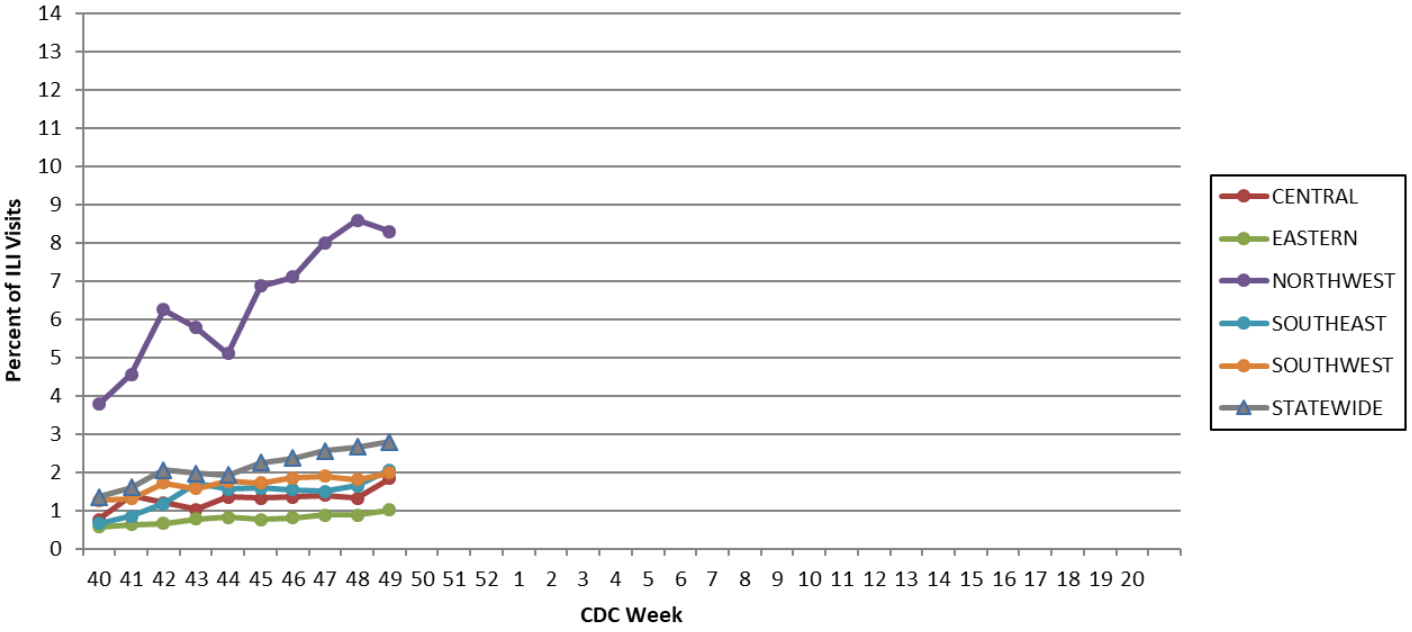
‡The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 8. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Age Group, Region and Statewide, Week 49, 2019*



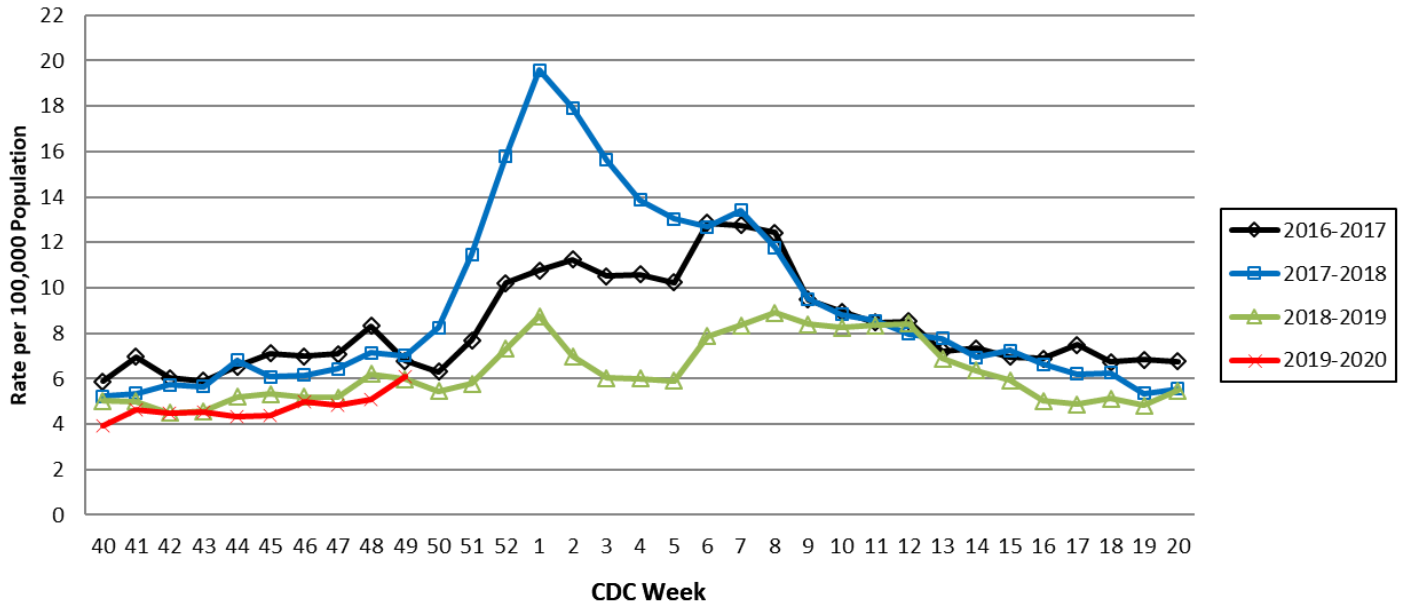
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 9. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Region and Statewide, 2019-2020 Influenza Season*



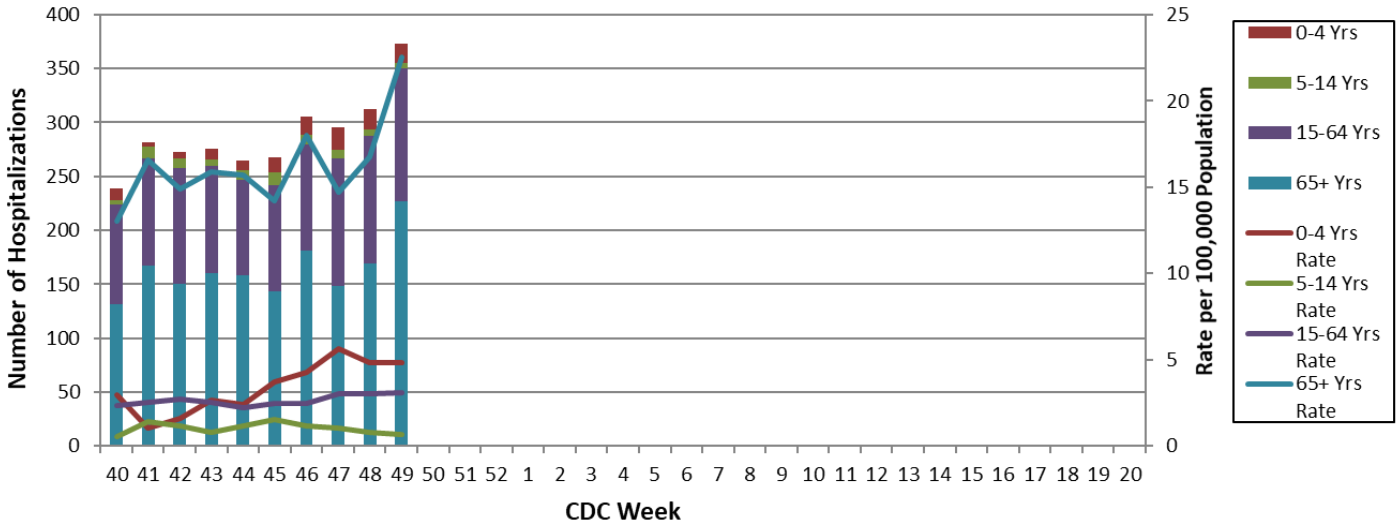
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 10. Weekly Rate of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Missouri Hospitals, 2016-2020 Influenza Seasons



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.
Population data from Missouri Census Data Center 2017 (https://census.missouri.edu).

Figure 11. Number of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Participating Missouri Hospitals, by Age Group, Week 49, 2019-2020 Influenza Season



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.

Additional Influenza Data Sources:

Centers for Disease Control and Prevention: National Influenza Surveillance (FluView):
http://www.cdc.gov/flu/weekly/fluactivitysurv.htm

The National Respiratory and Enteric Virus Surveillance System (NREVSS):
https://www.cdc.gov/surveillance/nrevss/

World Health Organization: International Influenza Surveillance:
http://www.who.int/influenza/surveillance_monitoring/en/

Missouri Weekly Influenza Surveillance Report
2019-2020 Influenza Season[1]

Week 50: December 8, 2019 – December 14, 2019

All data are preliminary and may change as more reports are received.

Summary:

- The estimated influenza activity in Missouri is Regional[2].

- A total of 857 laboratory-positive[3] influenza cases (237 influenza A, 598 influenza B, and 22 untyped) were reported during Week 50. The season-to-date total of laboratory-positive influenza cases is 3,246 (40.2% influenza A, 58.7% influenza B, and 1.1% untyped). One laboratory-positive case of influenza (AH1N1) was reported by the Missouri State Public Health Laboratory (MSPHL) during Week 50. The percentage of respiratory specimens testing positive for influenza in Missouri laboratories reporting to the National Respiratory and Enteric Virus Surveillance System (NREVSS) increased during Week 50 (Figure 6).

- Influenza-like illness (ILI) activity was above baseline for the Missouri Outpatient ILI Surveillance Network (ILINet) and for the hospital emergency room visit chief complaint data reported through ESSENCE. The reported percentage of visits for ILI was 4.17% (Figure 5) and 3.23% (Figure 7) through ILINet and ESSENCE respectively.[4] The ILI data from a small number of sites located in the Northwest Region of the state is currently unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

- Five influenza-associated deaths have been reported in Missouri as of Week 50.[5] During Week 49, 54 deaths involving Pneumonia and Influenza (P&I) were reported to the Bureau of Vital Records, resulting in a season-to-date total of 400 P&I associated deaths in Missouri.[6]

- No influenza or ILI-associated outbreaks or school closures have been reported in Missouri as of Week 50.

- Seasonal influenza activity in the United States has been elevated for five weeks and continued to increase during Week 49. National influenza surveillance information is prepared by CDC and is included in the weekly FluView report, which is available online at http://www.cdc.gov/flu/weekly/fluactivitysurv.htm.

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[1]The 2019-2020 influenza season begins CDC Week 40 (week ending October 5, 2019) and ends CDC Week 39 (week ending September 26, 2020).

[2]Regional is defined as: Outbreaks of influenza or increases in ILI and recent laboratory confirmed influenza in at least two but less than half the regions of the state with recent laboratory evidence of influenza in those regions.

[3]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.

[4]Influenza-like illness (ILI) is defined by ILINet as fever (temperature of 100ºF [37.8ºC] or greater) and a cough and/or a sore throat without a known cause other than influenza. ILI is defined by ESSENCE as Emergency Department chief complaints for Influenza or (FeverPlus and (Cough or SoreThroat) and not NonILIFevers).

[5]All influenza-associated deaths became reportable in Missouri in 2016.

[6]The P&I data are available one week later. The P&I data for the CDC Week provided is the most current data available.

Surveillance Data:

Interactive Maps

The jurisdiction-specific influenza data are provided though interactive maps available at http://bit.ly/moflu19. *Click on the jurisdiction to view the influenza data specific to that jurisdiction.*

- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, CDC Week 50**
- **Reported Week-specific Rate per 100,000 Population, CDC Week 50**
- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, Season-to-Date**
- **Reported Rate per 100,000 Population, Season-to-Date**

Data Figures

Figure 1. Number of Laboratory-positive† Influenza Cases by Influenza Type, Missouri, CDC Week 50 (December 8, 2019 – December 14, 2019)*

Influenza Type	Week 48	Week 49	Week 50	2019-2020* Season-to-Date
Influenza A	146	240	237	1,304
Influenza B	255	401	598	1,906
Influenza Unknown Or Untyped	1	5	22	36
Total	402	646	857	3,246

†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv).

Figure 2. Number of Laboratory-positive† Influenza Cases and Case Rates by Age Group, Missouri, CDC Week 50 (December 8, 2019 – December 14, 2019)*‡

Age Group	Week 50 Cases	Week 50 Rate‡	2019-2020* Season-to-Date	2019-2020* Season-to-Date Rate‡
00-04	149	39.80	584	156.00
05-24	423	26.36	1,324	82.52
25-49	177	9.25	743	38.83
50-64	70	5.66	349	28.23
65+	38	3.98	246	25.76
Total	857	14.09	3,246	53.36

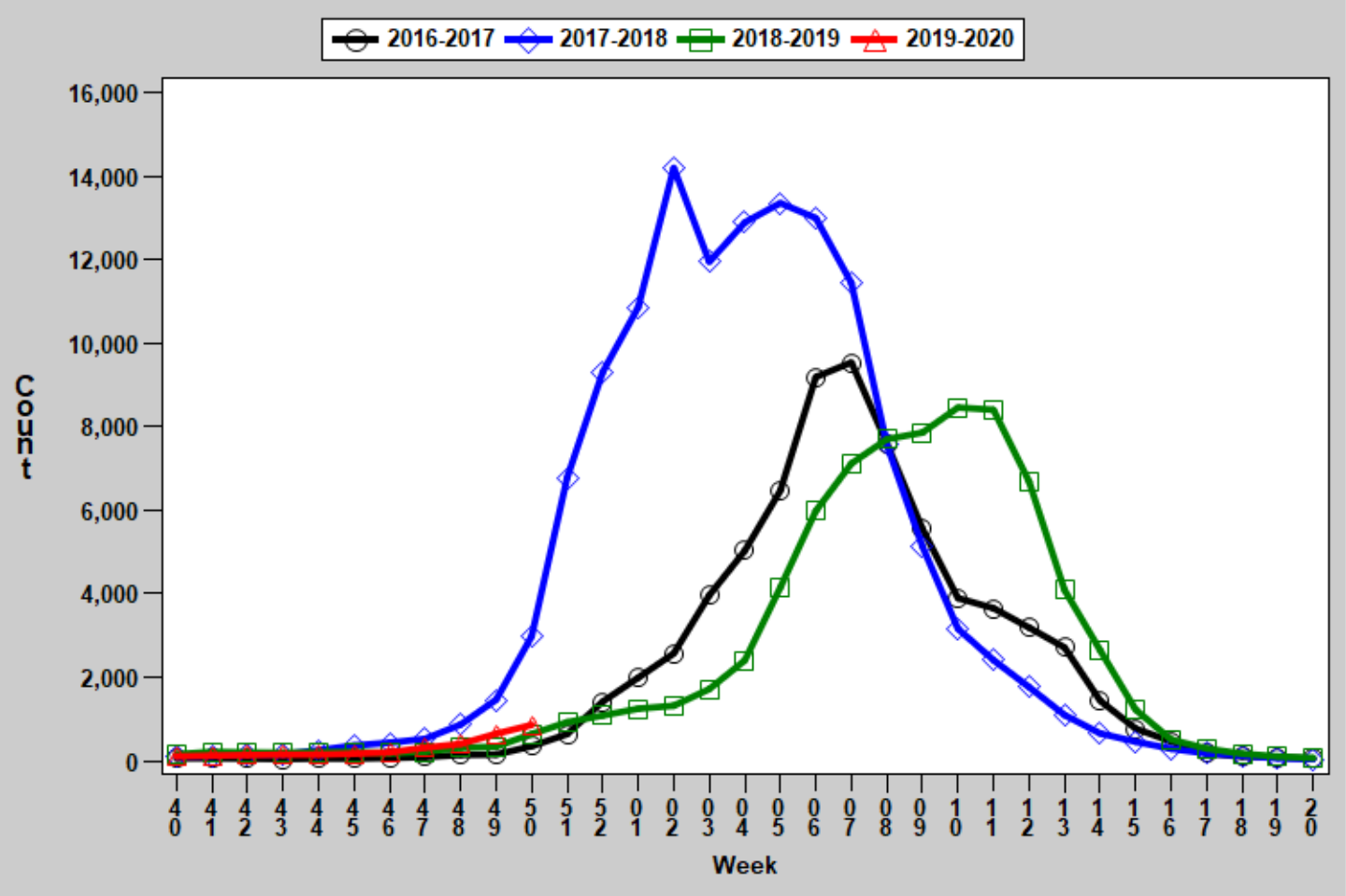
†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
‡Incidence Rate per 100,000 population

Figure 3. Number of Laboratory-positive[†] Influenza Cases and Case Rates by Region, Missouri, CDC Week 50 (December 8, 2019 – December 14, 2019)[*‡]

Region	Week 50 Cases	Week 50 Rate[‡]	2019-2020* Season-to-Date	2019-2020* Season-to-Date Rate[‡]
Central	95	14.03	434	64.11
Eastern	114	5.03	673	29.70
Northwest	514	32.17	1,319	82.57
Southeast	69	14.63	414	87.77
Southwest	65	6.07	406	37.90
Total	857	14.09	3,246	53.36

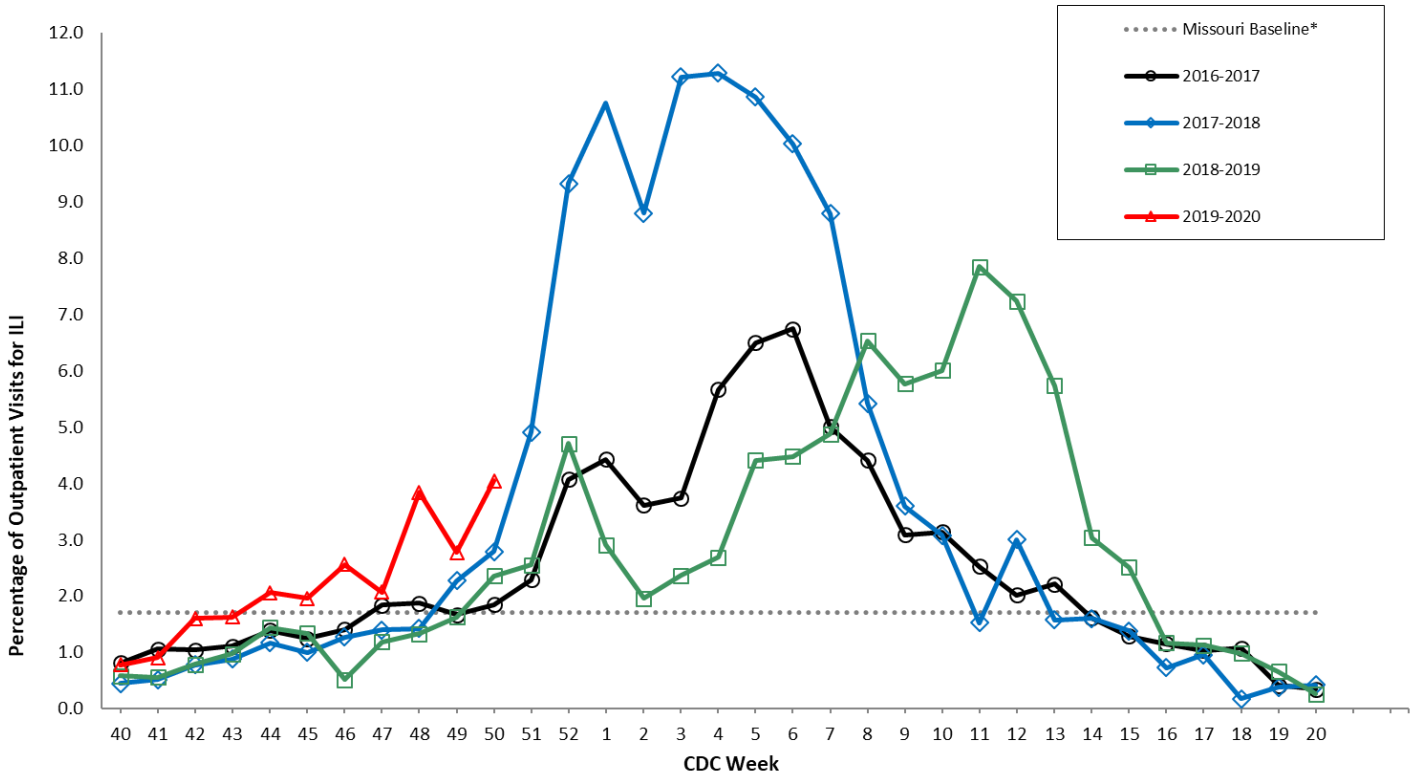
[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
[‡]Incidence Rate per 100,000 population

Figure 4. Number of Laboratory-positive[†] Influenza Cases by CDC Week, Missouri, 2016-2020[*]



[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).Data Source: Missouri Health Information Surveillance System (WebSurv).

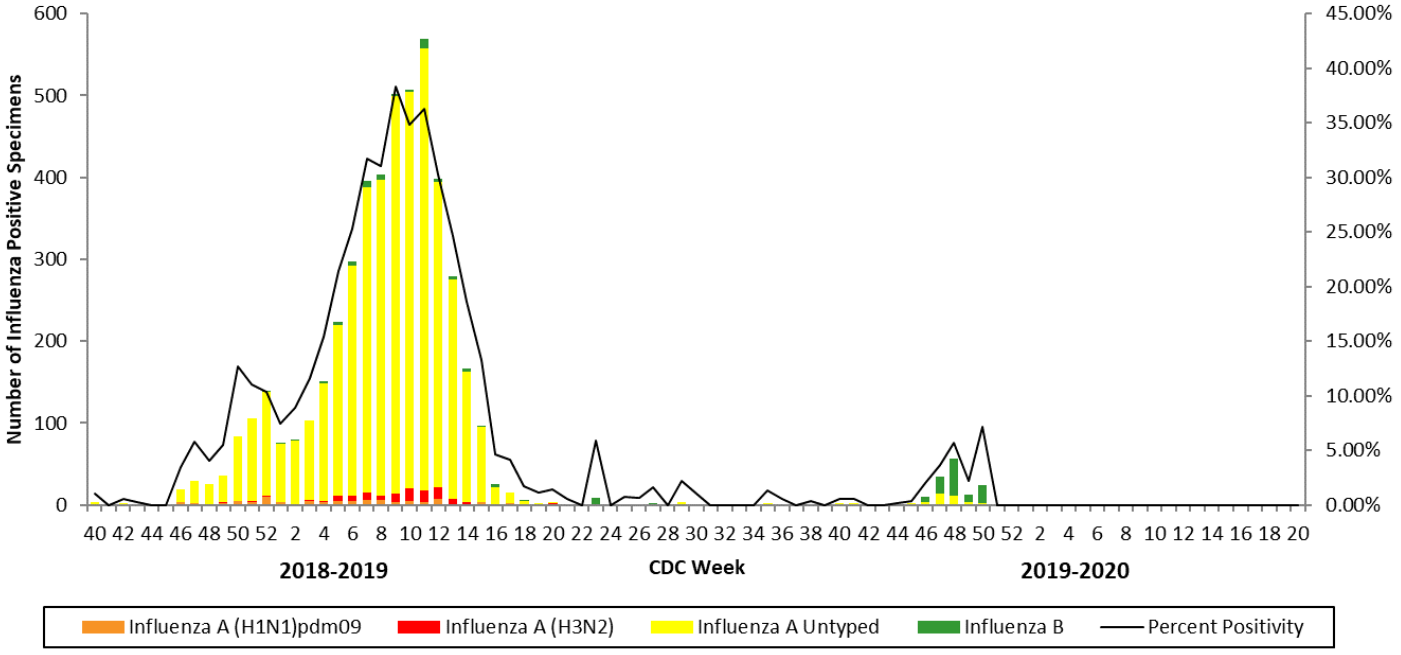
Figure 5. Percentage of Outpatient Visits for Influenza-like Illness (ILI), Missouri Outpatient ILI Surveillance Network (ILINet) 2016-2020*†



*The ILINet Region 7 (MO, IA, KS, NE) baseline is the mean percentage of patient visits for ILI during non-influenza weeks for the previous three seasons, plus two standard deviations. A non-influenza week is defined as periods of two or more consecutive weeks in which each week accounted for less than 2% of the season's total number of specimens that tested positive for influenza. Data Source: U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Centers for Disease Control and Prevention (CDC).

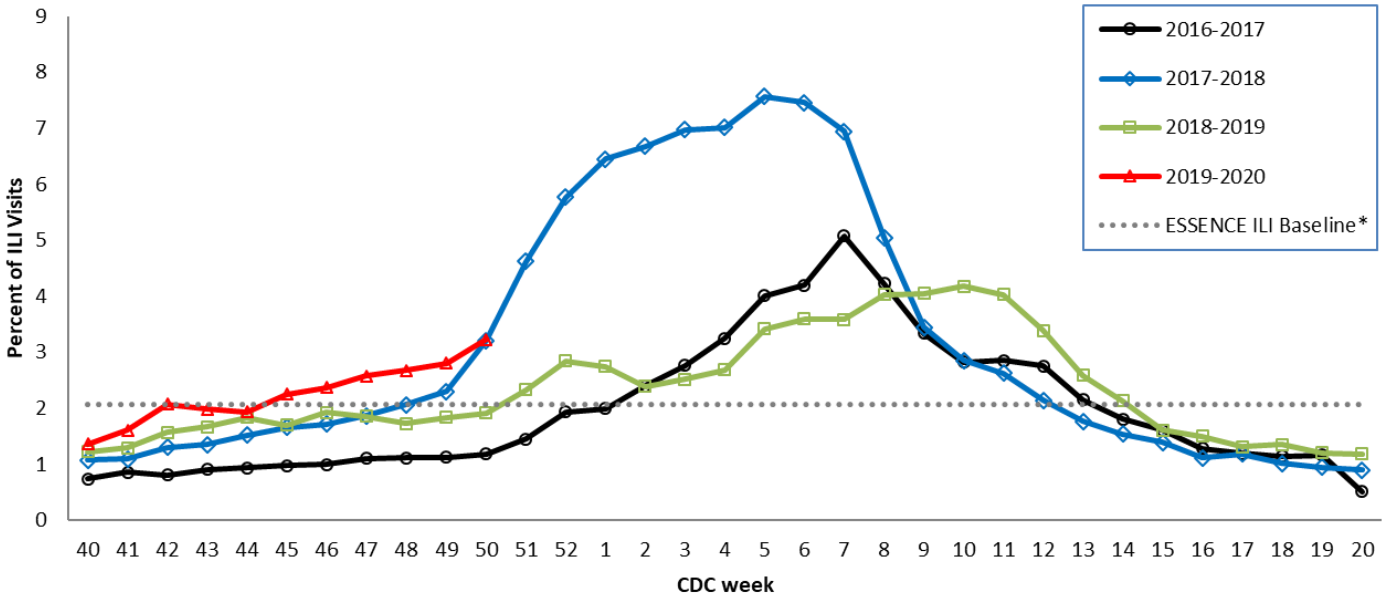
†2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).

Figure 6. Season-to-Date PCR (+) Tests for Influenza in Missouri



Data Source: National Respiratory and Enteric Virus Surveillance System (NREVSS), Centers for Disease Control and Prevention (CDC). 2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).

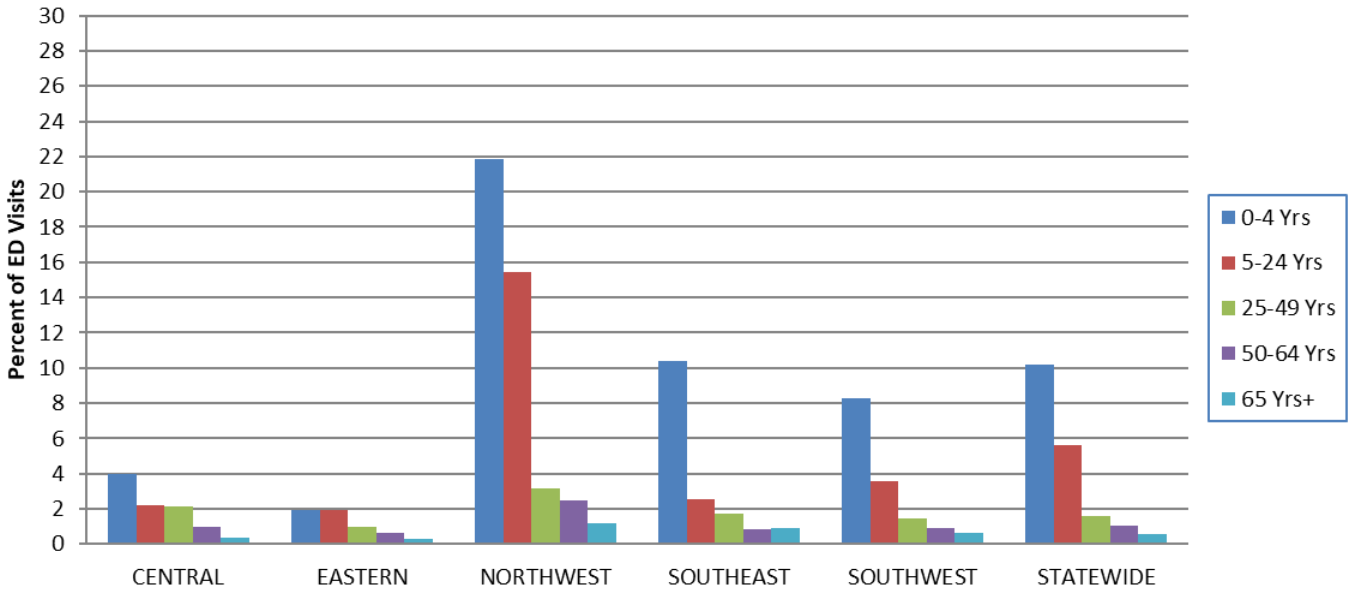
Figure 7. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, 2016-2020 Influenza Seasons*‡



*The ESSENCE ILI Baseline is the mean percent of ILI visits for each week during the previous three years (2016-18) when percentage of ILI visits were less than 2% of total visits, plus two standard deviations. Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.

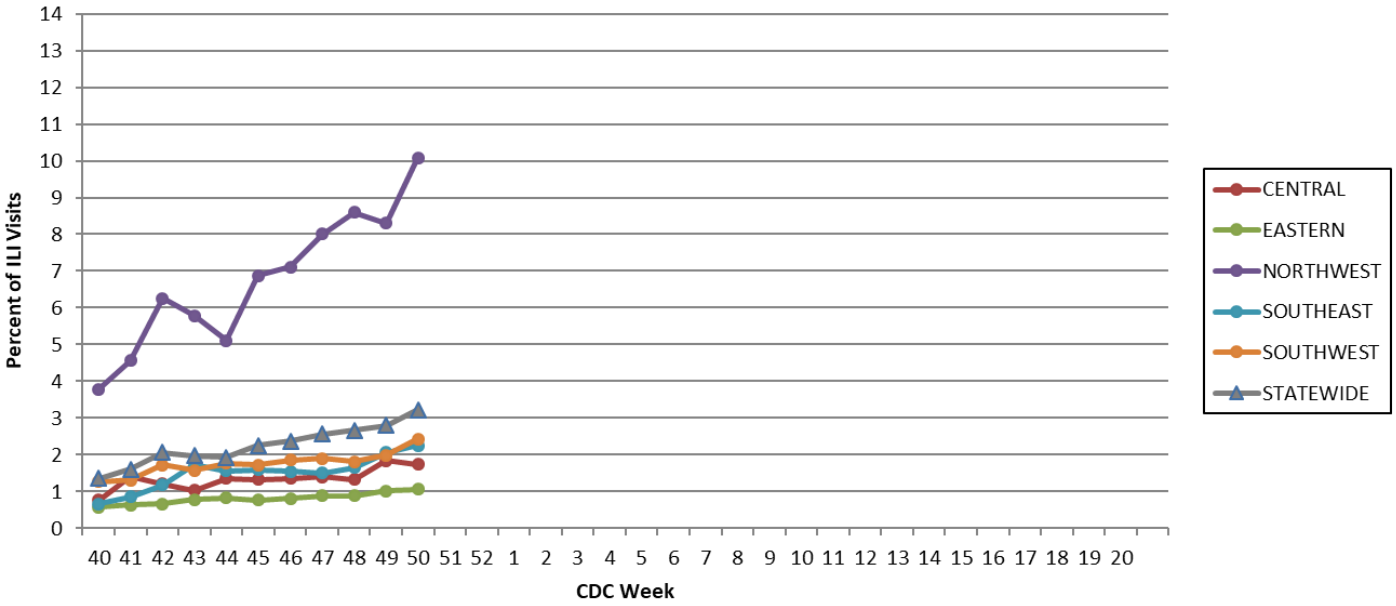
‡The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 8. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Age Group, Region and Statewide, Week 50, 2019*



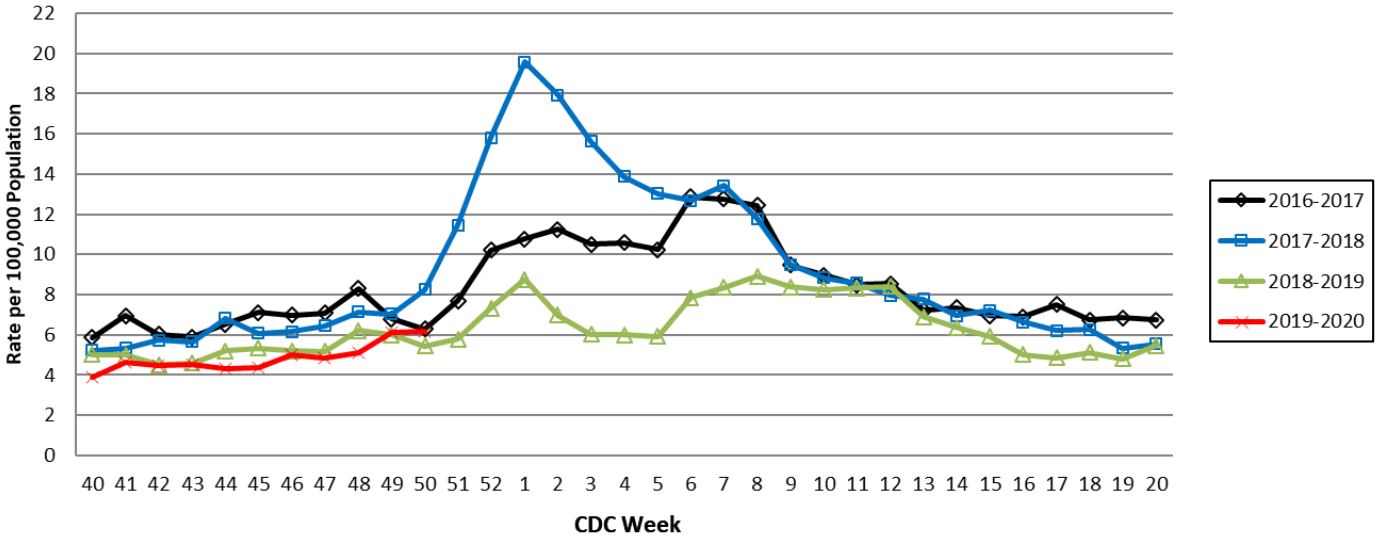
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 9. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Region and Statewide, 2019-2020 Influenza Season*



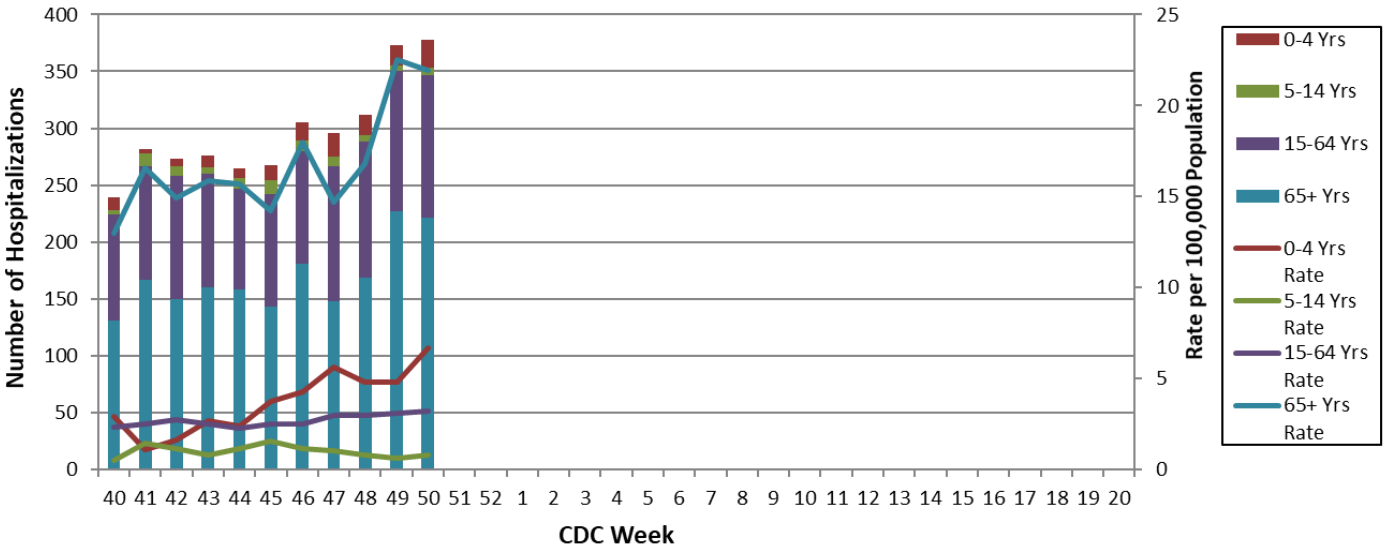
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 10. Weekly Rate of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Missouri Hospitals, 2016-2020 Influenza Seasons



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.
Population data from Missouri Census Data Center 2017 (https://census.missouri.edu).

Figure 11. Number of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Participating Missouri Hospitals, by Age Group, Week 50, 2019-2020 Influenza Season



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.

Additional Influenza Data Sources:

Centers for Disease Control and Prevention: National Influenza Surveillance (FluView):
http://www.cdc.gov/flu/weekly/fluactivitysurv.htm

The National Respiratory and Enteric Virus Surveillance System (NREVSS):
https://www.cdc.gov/surveillance/nrevss/

World Health Organization: International Influenza Surveillance:
http://www.who.int/influenza/surveillance_monitoring/en/

Missouri Weekly Influenza Surveillance Report
2019-2020 Influenza Season[1]

Week 51: December 15, 2019 – December 21, 2019

All data are preliminary and may change as more reports are received.

Summary:

- The estimated influenza activity in Missouri is Regional[2].
- A total of 775 laboratory-positive[3] influenza cases (234 influenza A, 537 influenza B, and 4 untyped) were reported during Week 51. The season-to-date total of laboratory-positive influenza cases is 4,299 (38.2% influenza A, 60.7% influenza B, and 1.1% untyped). Two laboratory-positive cases of influenza (AH1N1) were reported by the Missouri State Public Health Laboratory (MSPHL) during Week 51. The percentage of respiratory specimens testing positive for influenza in Missouri laboratories reporting to the National Respiratory and Enteric Virus Surveillance System (NREVSS) decreased during Week 51 (Figure 6).
- Influenza-like illness (ILI) activity was above baseline for the Missouri Outpatient ILI Surveillance Network (ILINet) and for the hospital emergency room visit chief complaint data reported through ESSENCE. The reported percentage of visits for ILI was 3.08% (Figure 5) and 3.96% (Figure 7) through ILINet and ESSENCE respectively.[4] The ILI data from a small number of sites located in the Northwest Region of the state is currently unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.
- Seven influenza-associated deaths have been reported in Missouri as of Week 51.[5] During Week 50, 15 deaths involving Pneumonia and Influenza (P&I) were reported to the Bureau of Vital Records, resulting in a season-to-date total of 415 P&I associated deaths in Missouri.[6]
- No influenza or ILI-associated outbreaks or school closures have been reported in Missouri as of Week 51.
- Seasonal influenza activity in the United States has been elevated for six weeks and continued to increase during Week 50. National influenza surveillance information is prepared by CDC and is included in the weekly FluView report, which is available online at http://www.cdc.gov/flu/weekly/fluactivitysurv.htm.

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[1]The 2019-2020 influenza season begins CDC Week 40 (week ending October 5, 2019) and ends CDC Week 39 (week ending September 26, 2020).

[2]Regional is defined as: Outbreaks of influenza or increases in ILI and recent laboratory confirmed influenza in at least two but less than half the regions of the state with recent laboratory evidence of influenza in those regions.

[3]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.

[4]Influenza-like illness (ILI) is defined by ILINet as fever (temperature of 100ºF [37.8ºC] or greater) and a cough and/or a sore throat without a known cause other than influenza. ILI is defined by ESSENCE as Emergency Department chief complaints for Influenza or (FeverPlus and (Cough or SoreThroat) and not NonILIFevers).

[5]All influenza-associated deaths became reportable in Missouri in 2016.

[6]The P&I data are available one week later. The P&I data for the CDC Week provided is the most current data available.

Surveillance Data:

Interactive Maps

The jurisdiction-specific influenza data are provided though interactive maps available at http://bit.ly/moflu19. *Click on the jurisdiction to view the influenza data specific to that jurisdiction.*

- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, CDC Week 51**
- **Reported Week-specific Rate per 100,000 Population, CDC Week 51**
- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, Season-to-Date**
- **Reported Rate per 100,000 Population, Season-to-Date**

Data Figures

Figure 1. Number of Laboratory-positive† Influenza Cases by Influenza Type, Missouri, CDC Week 51 (December 15, 2019 – December 21, 2019)*

Influenza Type	Week 49	Week 50	Week 51	2019-2020* Season-to-Date
Influenza A	243	330	234	1,641
Influenza B	407	751	537	2,611
Influenza Unknown Or Untyped	6	28	4	47
Total	656	1,109	775	4,299

†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv).

Figure 2. Number of Laboratory-positive† Influenza Cases and Case Rates by Age Group, Missouri, CDC Week 51 (December 15, 2019 – December 21, 2019)*‡

Age Group	Week 51 Cases	Week 51 Rate‡	2019-2020* Season-to-Date	2019-2020* Season-to-Date Rate‡
00-04	139	37.13	759	202.75
05-24	391	24.37	1,853	115.49
25-49	157	8.20	968	50.59
50-64	56	4.53	423	34.21
65+	32	3.35	296	31.00
Total	775	12.74	4,299	70.66

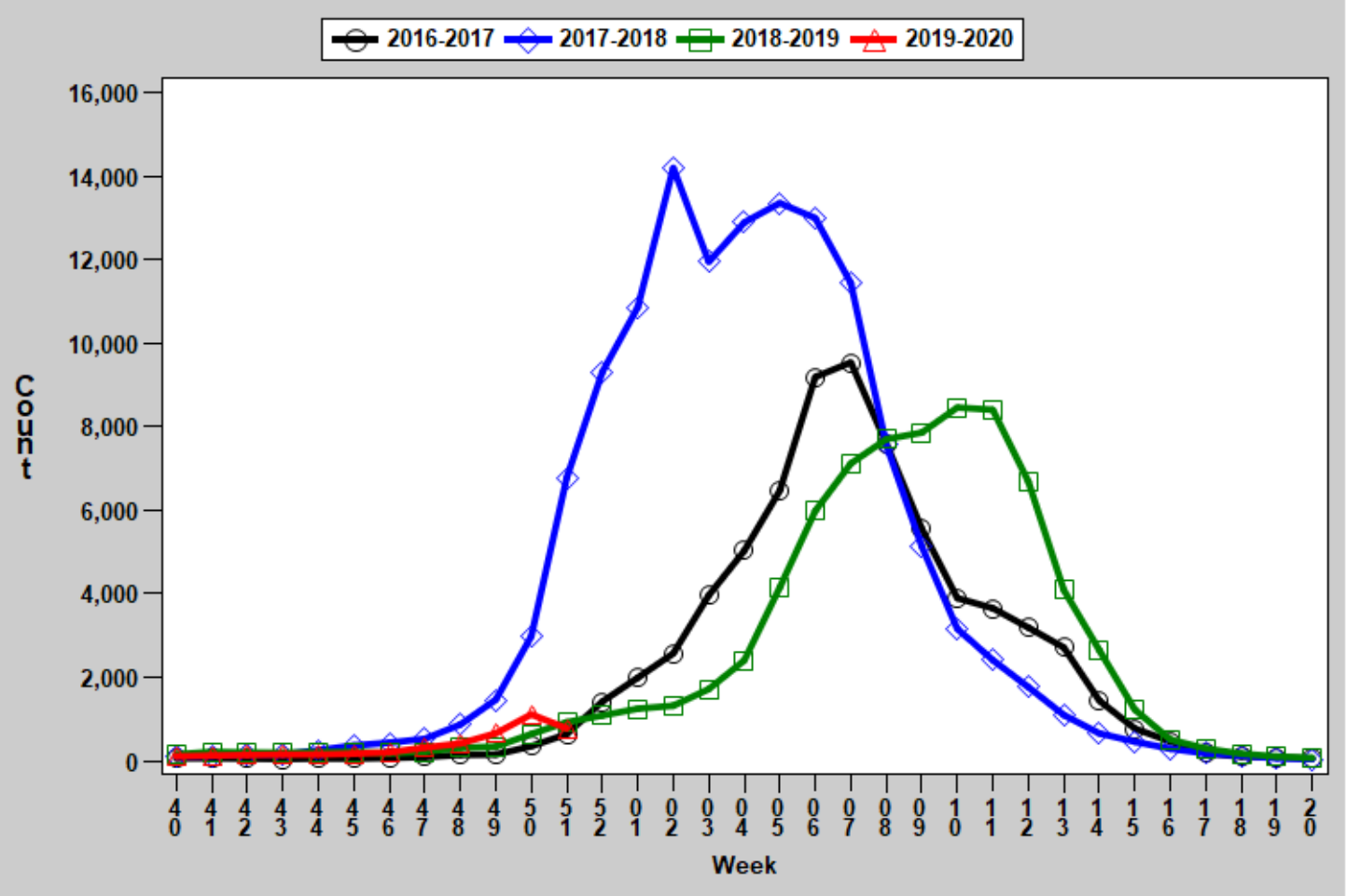
†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
‡Incidence Rate per 100,000 population

Figure 3. Number of Laboratory-positive[†] Influenza Cases and Case Rates by Region, Missouri, CDC Week 51 (December 15, 2019 – December 21, 2019)[*‡]

Region	Week 51 Cases	Week 51 Rate[‡]	2019-2020* Season-to-Date	2019-2020* Season-to-Date Rate[‡]
Central	189	27.92	658	97.19
Eastern	111	4.90	813	35.88
Northwest	301	18.84	1,791	112.11
Southeast	100	21.20	529	112.15
Southwest	74	6.91	508	47.42
Total	775	12.74	4,299	70.66

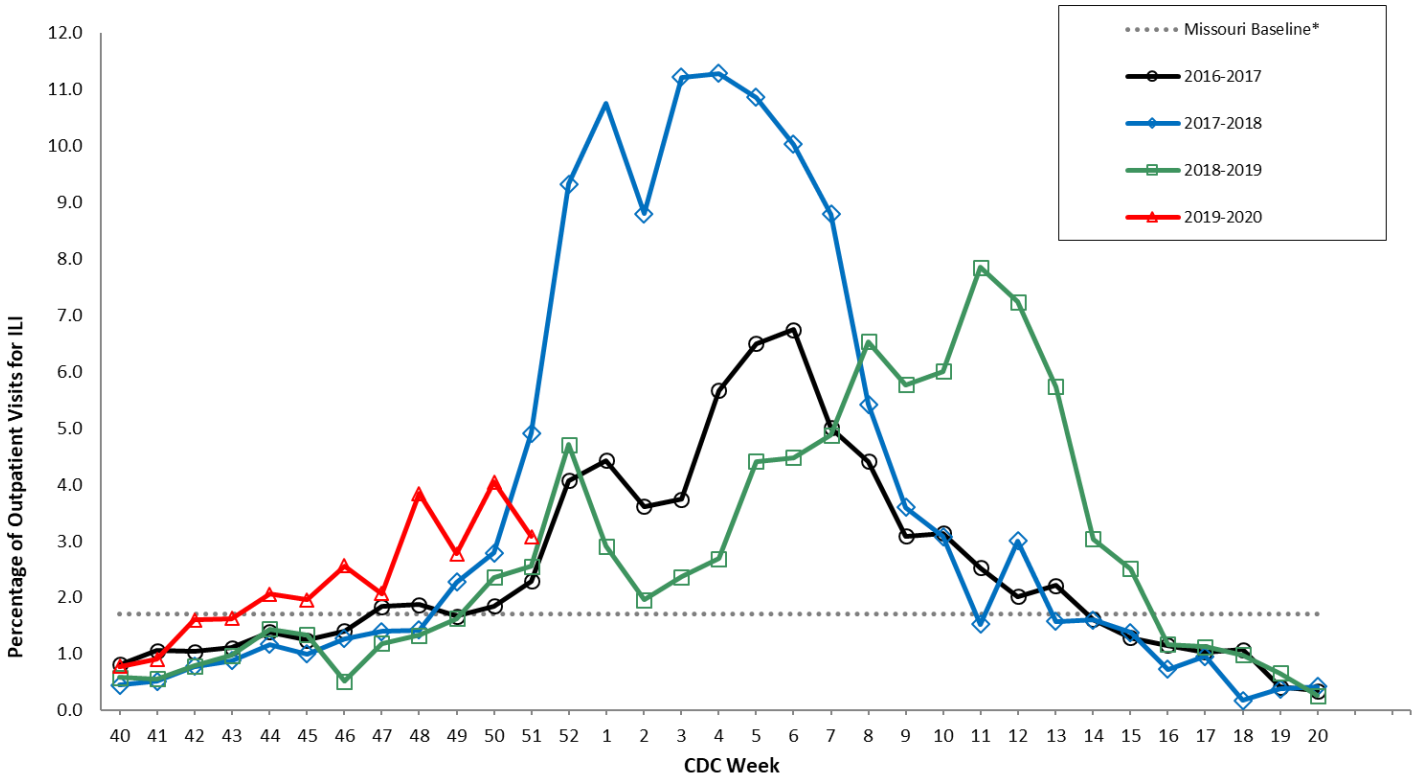
[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
[‡]Incidence Rate per 100,000 population

Figure 4. Number of Laboratory-positive[†] Influenza Cases by CDC Week, Missouri, 2016-2020[*]



[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).Data Source: Missouri Health Information Surveillance System (WebSurv).

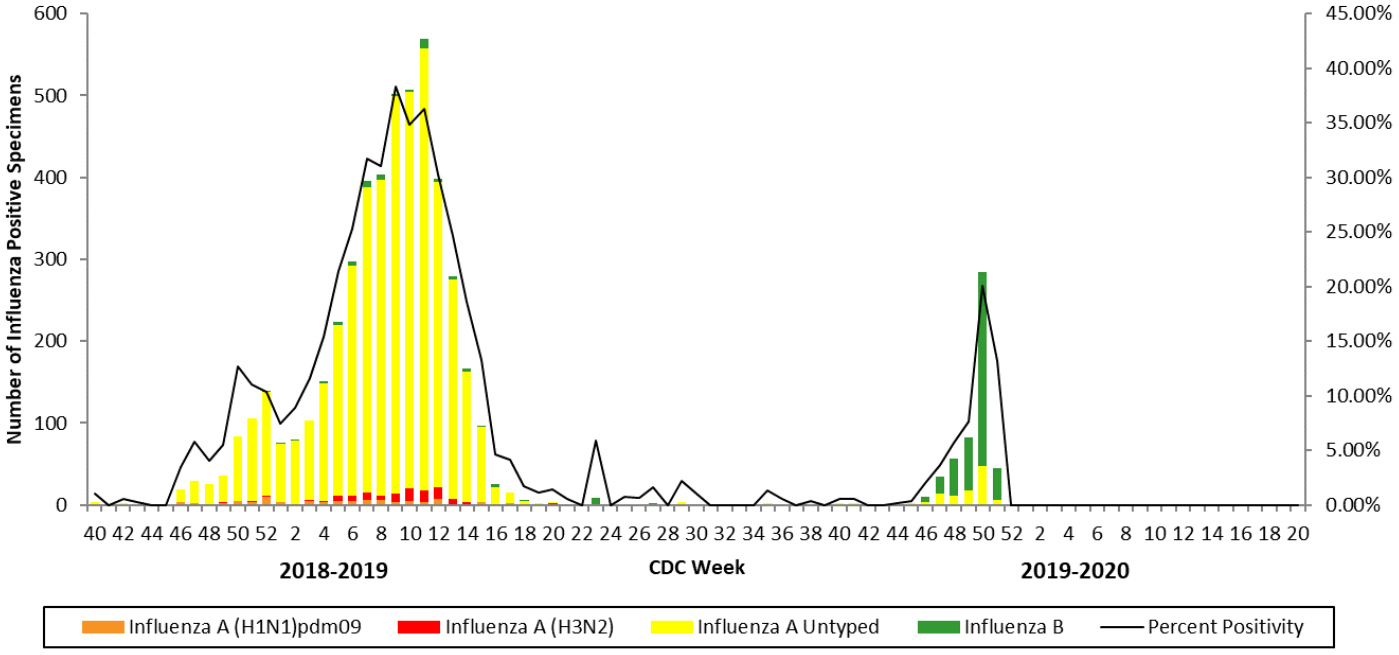
Figure 5. Percentage of Outpatient Visits for Influenza-like Illness (ILI), Missouri Outpatient ILI Surveillance Network (ILINet) 2016-2020*†



*The ILINet Region 7 (MO, IA, KS, NE) baseline is the mean percentage of patient visits for ILI during non-influenza weeks for the previous three seasons, plus two standard deviations. A non-influenza week is defined as periods of two or more consecutive weeks in which each week accounted for less than 2% of the season's total number of specimens that tested positive for influenza. Data Source: U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Centers for Disease Control and Prevention (CDC).

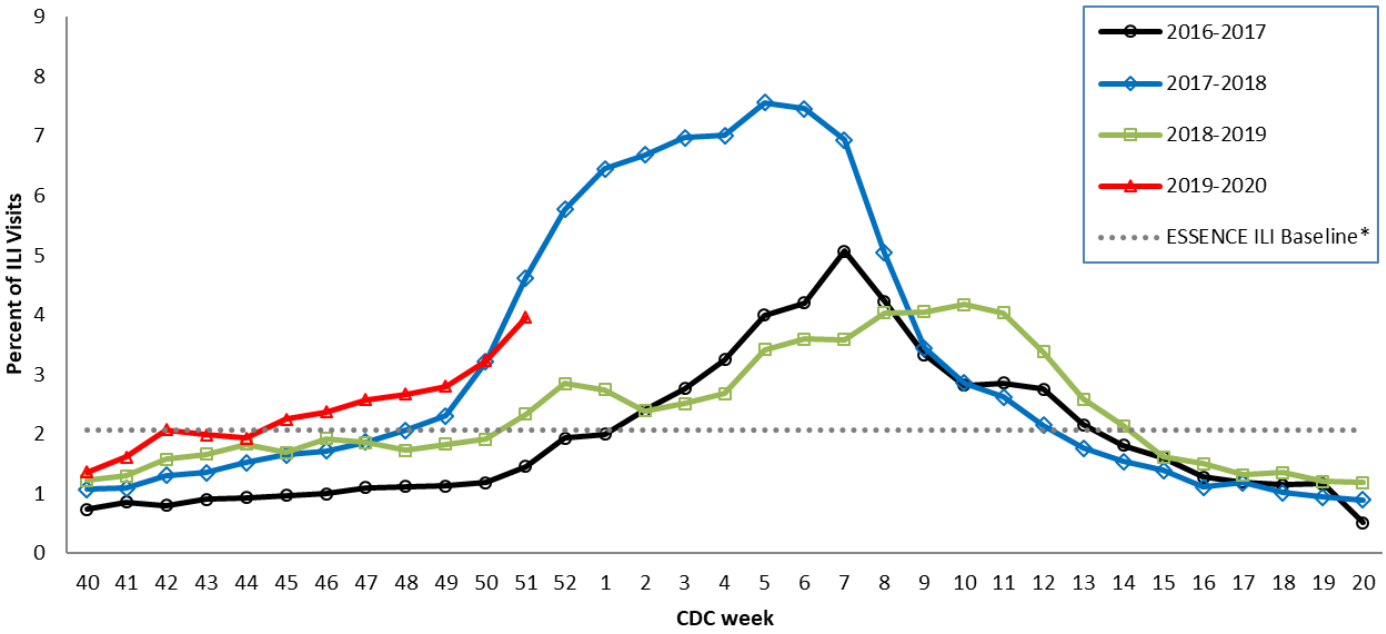
†2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).

Figure 6. Season-to-Date PCR (+) Tests for Influenza in Missouri



Data Source: National Respiratory and Enteric Virus Surveillance System (NREVSS), Centers for Disease Control and Prevention (CDC).
2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).

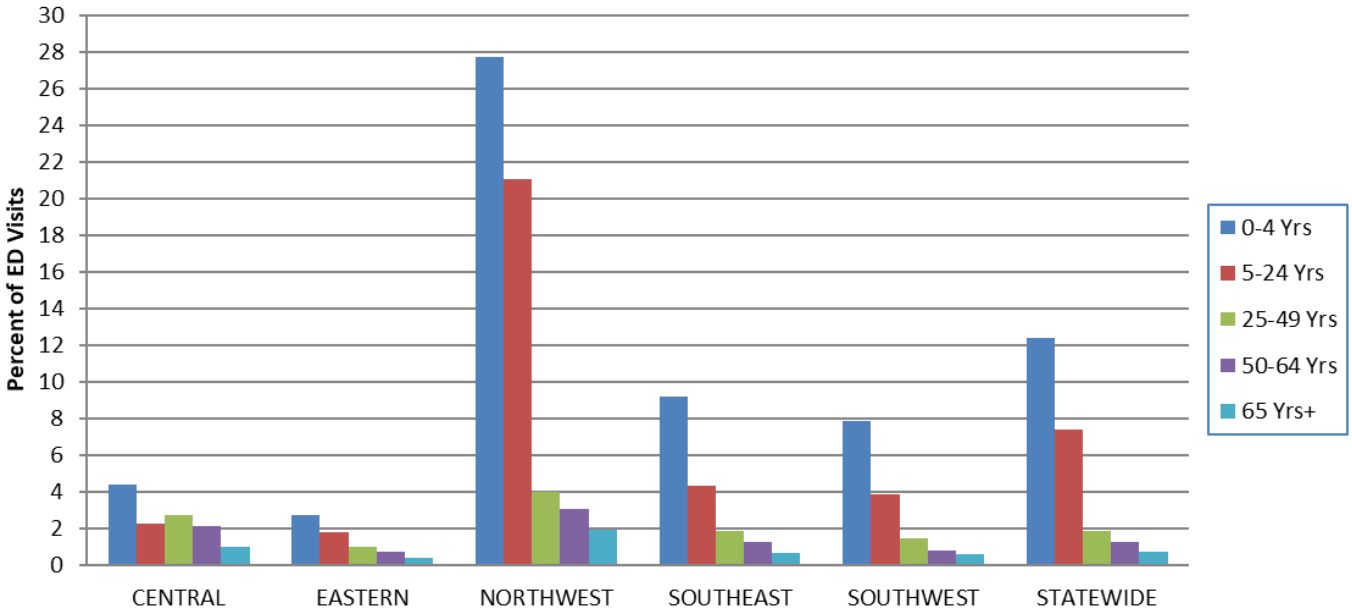
Figure 7. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, 2016-2020 Influenza Seasons*‡



*The ESSENCE ILI Baseline is the mean percent of ILI visits for each week during the previous three years (2016-18) when percentage of ILI visits were less than 2% of total visits, plus two standard deviations. Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.

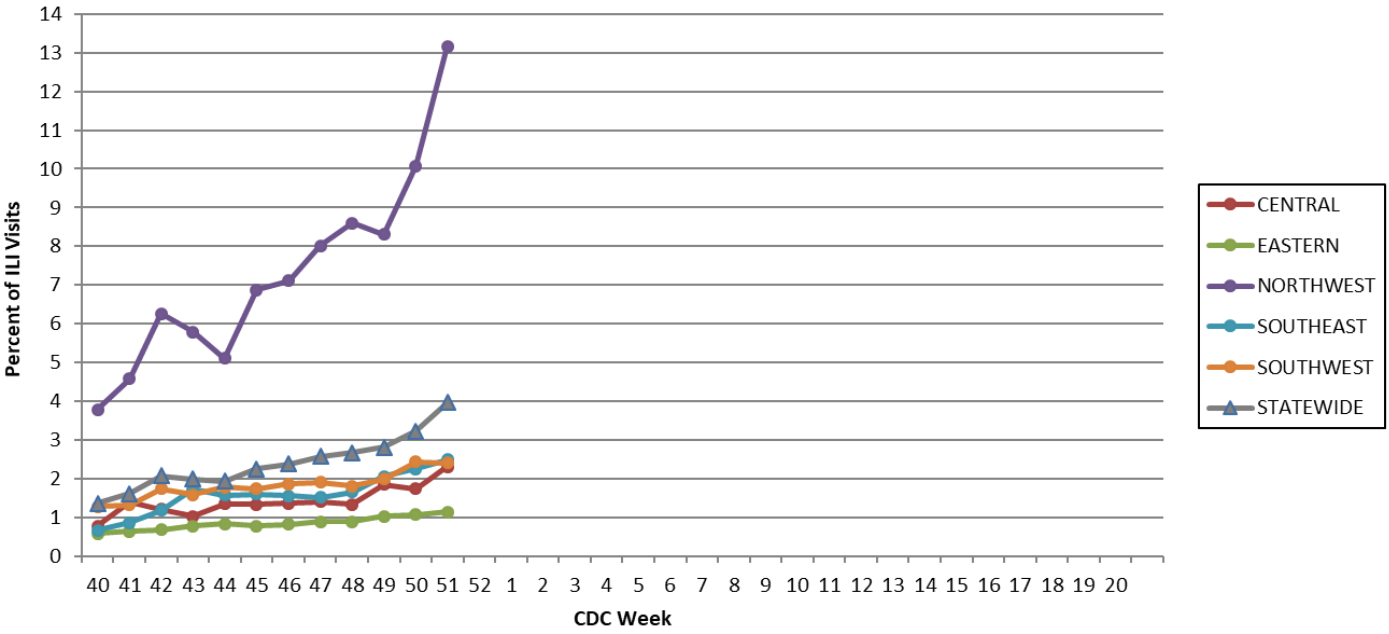
‡The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 8. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Age Group, Region and Statewide, Week 51, 2019*



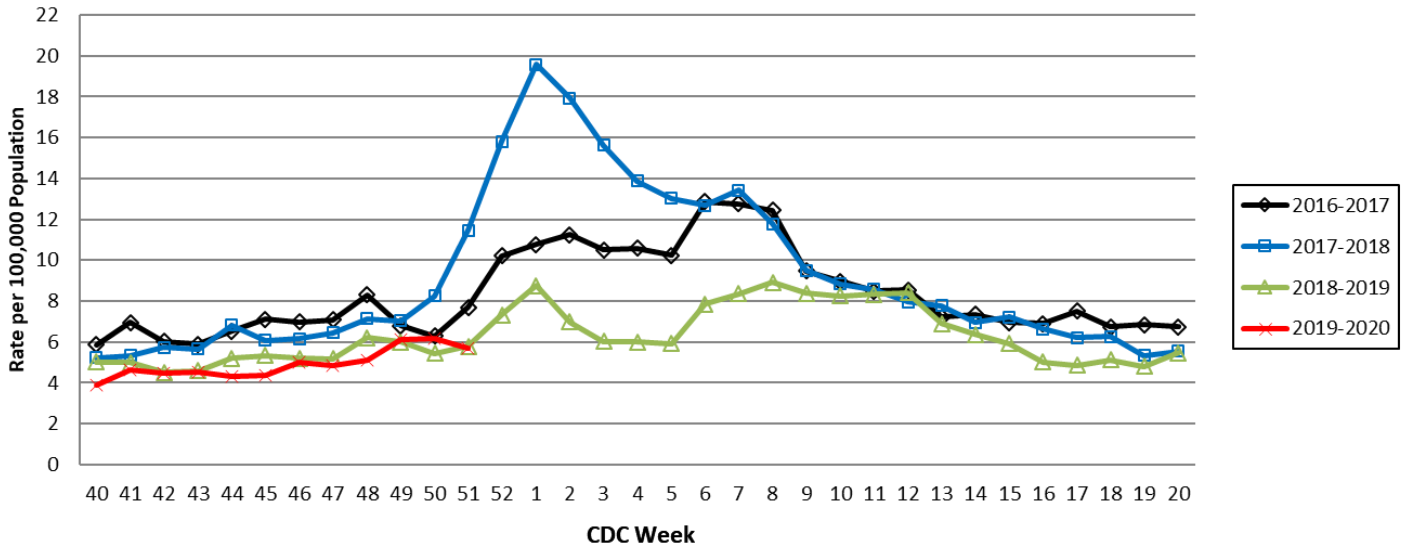
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 9. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Region and Statewide, 2019-2020 Influenza Season*



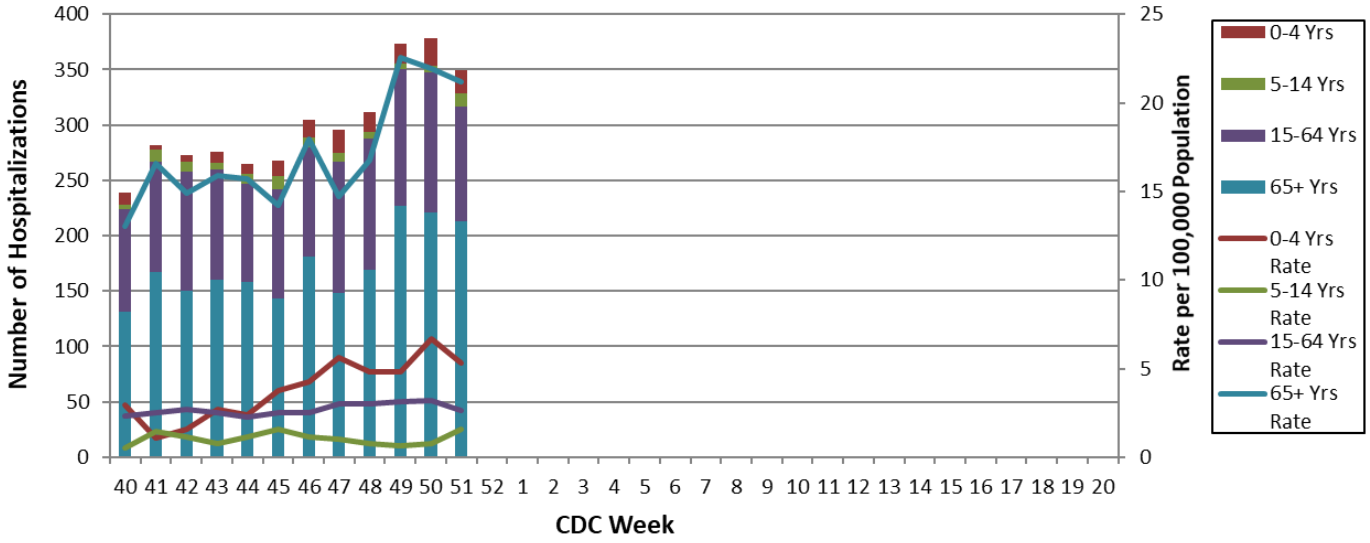
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 10. Weekly Rate of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Missouri Hospitals, 2016-2020 Influenza Seasons



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.
Population data from Missouri Census Data Center 2017 (https://census.missouri.edu).

Figure 11. Number of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Participating Missouri Hospitals, by Age Group, Week 51, 2019-2020 Influenza Season



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.

Additional Influenza Data Sources:

Centers for Disease Control and Prevention: National Influenza Surveillance (FluView):
http://www.cdc.gov/flu/weekly/fluactivitysurv.htm

The National Respiratory and Enteric Virus Surveillance System (NREVSS):
https://www.cdc.gov/surveillance/nrevss/

World Health Organization: International Influenza Surveillance:
http://www.who.int/influenza/surveillance_monitoring/en/

Missouri Weekly Influenza Surveillance Report
2019-2020 Influenza Season[1]

Week 52: December 22, 2019 – December 28, 2019

All data are preliminary and may change as more reports are received.

Summary:

- The estimated influenza activity in Missouri is Widespread[2].

- A total of 779 laboratory-positive[3] influenza cases (306 influenza A, 470 influenza B, and 3 untyped) were reported during Week 52. The season-to-date total of laboratory-positive influenza cases is 5,900 (36.3% influenza A, 62.8% influenza B, and 0.9% untyped). Six laboratory-positive cases of influenza (three influenza A (H1N1), one influenza A (H3), and two influenza B (Victoria)) were reported by the Missouri State Public Health Laboratory (MSPHL) during Week 52. The percentage of respiratory specimens testing positive for influenza in Missouri laboratories reporting to the National Respiratory and Enteric Virus Surveillance System (NREVSS) decreased during Week 52 (Figure 6).

- Influenza-like illness (ILI) activity was above baseline for the Missouri Outpatient ILI Surveillance Network (ILINet) and for the hospital emergency room visit chief complaint data reported through ESSENCE. The reported percentage of visits for ILI was 5.03% (Figure 5) and 4.4% (Figure 7) through ILINet and ESSENCE respectively.[4] The ILI data from a small number of sites located in the Northwest Region of the state is currently unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

- Eight influenza-associated deaths have been reported in Missouri as of Week 52.[5] During Week 51, 29 deaths involving Pneumonia and Influenza (P&I) were reported to the Bureau of Vital Records, resulting in a season-to-date total of 444 P&I associated deaths in Missouri.[6]

- No influenza or ILI-associated outbreaks or school closures have been reported in Missouri as of Week 52.

- Seasonal influenza activity in the United States has been elevated for seven weeks and continued to increase during Week 51. National influenza surveillance information is prepared by CDC and is included in the weekly FluView report, which is available online at http://www.cdc.gov/flu/weekly/fluactivitysurv.htm.

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[1]The 2019-2020 influenza season begins CDC Week 40 (week ending October 5, 2019) and ends CDC Week 39 (week ending September 26, 2020).

[2]Widespread is defined as: Outbreaks of influenza or increases in ILI cases and recent laboratory-confirmed influenza in at least half the regions of the state with recent laboratory evidence of influenza in the state.

[3]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.

[4]Influenza-like illness (ILI) is defined by ILINet as fever (temperature of 100°F [37.8°C] or greater) and a cough and/or a sore throat without a known cause other than influenza. ILI is defined by ESSENCE as Emergency Department chief complaints for Influenza or (FeverPlus and (Cough or SoreThroat) and not NonILIFevers).

[5]All influenza-associated deaths became reportable in Missouri in 2016.

[6]The P&I data are available one week later. The P&I data for the CDC Week provided is the most current data available.

Surveillance Data:

Interactive Maps

The jurisdiction-specific influenza data are provided though interactive maps available at http://bit.ly/moflu19. *Click on the jurisdiction to view the influenza data specific to that jurisdiction.*

- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, CDC Week 52**
- **Reported Week-specific Rate per 100,000 Population, CDC Week 52**
- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, Season-to-Date**
- **Reported Rate per 100,000 Population, Season-to-Date**

Data Figures

Figure 1. Number of Laboratory-positive† Influenza Cases by Influenza Type, Missouri, CDC Week 52 (December 22, 2019 – December 28, 2019)*

Influenza Type	Week 50	Week 51	Week 52	2019-2020* Season-to-Date
Influenza A	347	409	306	2,141
Influenza B	798	1,106	470	3,703
Influenza Unknown Or Untyped	28	10	3	56
Total	1,173	1,525	779	5,900

†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv).

Figure 2. Number of Laboratory-positive† Influenza Cases and Case Rates by Age Group, Missouri, CDC Week 52 (December 22, 2019 – December 28, 2019)*‡

Age Group	Week 52 Cases	Week 52 Rate‡	2019-2020* Season-to-Date	2019-2020* Season-to-Date Rate‡
00-04	124	33.12	1,028	274.60
05-24	331	20.63	2,595	161.73
25-49	208	10.87	1,370	71.60
50-64	81	6.55	555	44.89
65+	35	3.67	352	36.86
Total	779	12.80	5,900	96.98

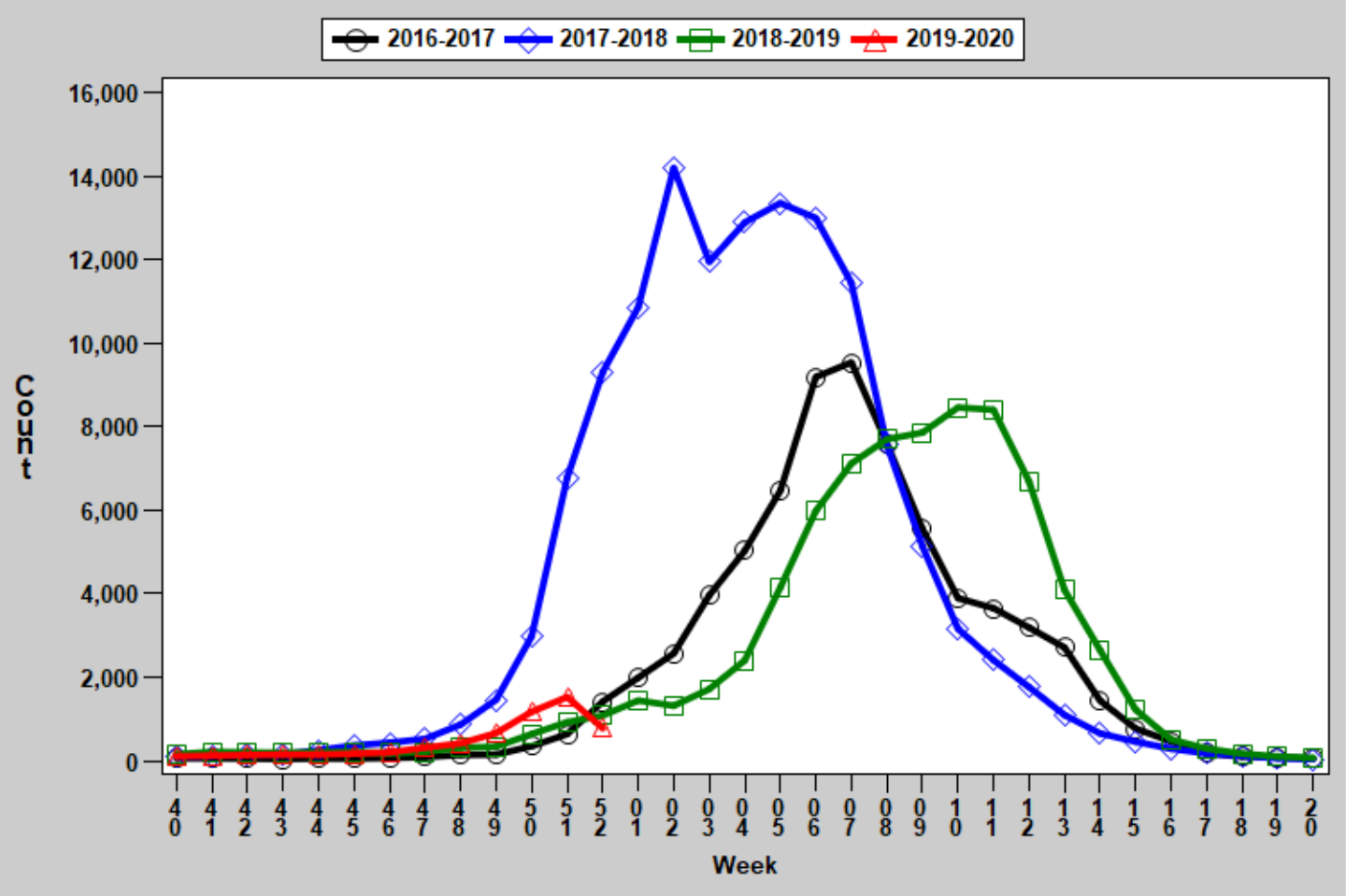
†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
‡Incidence Rate per 100,000 population

Figure 3. Number of Laboratory-positive[†] Influenza Cases and Case Rates by Region, Missouri, CDC Week 52 (December 22, 2019 – December 28, 2019)[*‡]

Region	Week 52 Cases	Week 52 Rate[‡]	2019-2020* Season-to-Date	2019-2020* Season-to-Date Rate[‡]
Central	132	19.50	886	130.87
Eastern	220	9.71	1,067	47.08
Northwest	275	17.21	2,662	166.63
Southeast	44	9.33	584	123.81
Southwest	108	10.08	701	65.43
Total	779	12.80	5,900	96.98

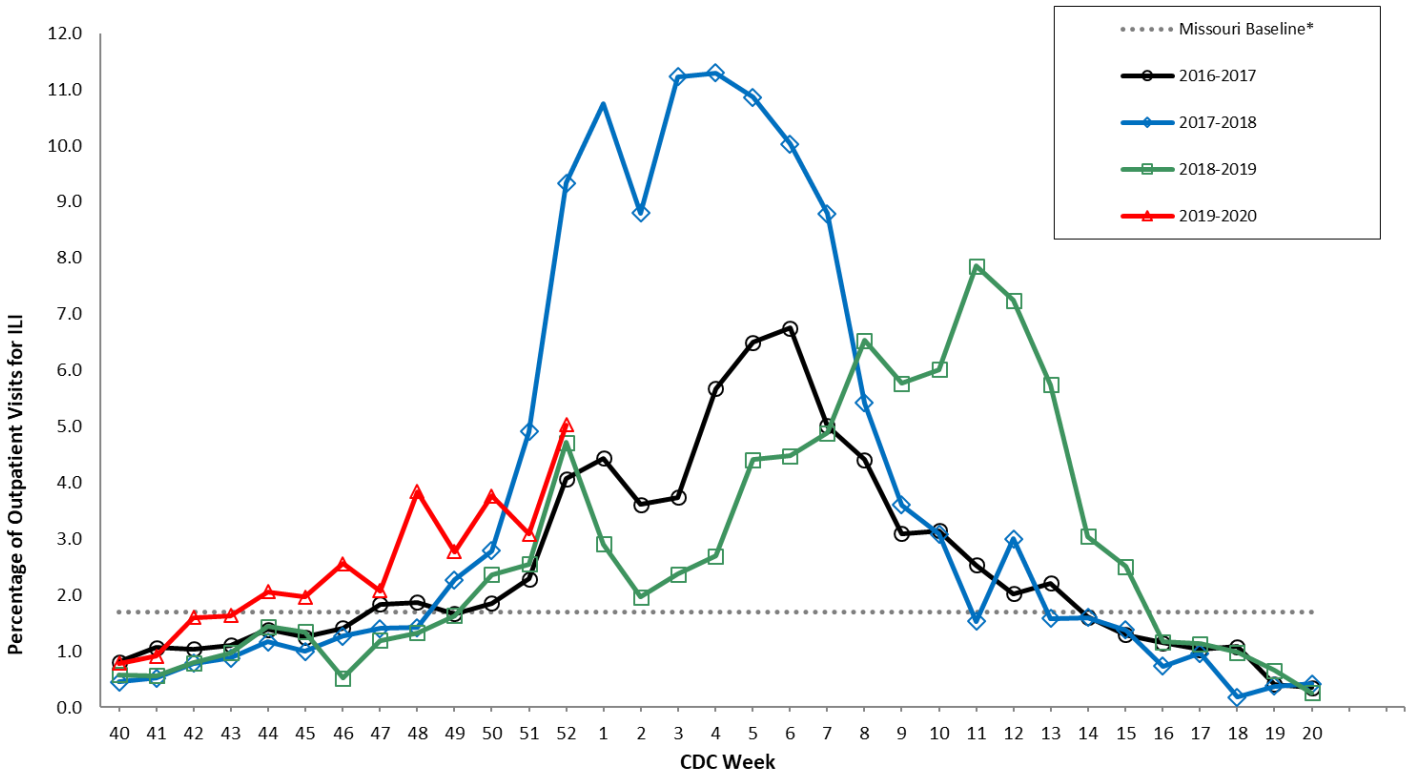
[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
[‡]Incidence Rate per 100,000 population

Figure 4. Number of Laboratory-positive[†] Influenza Cases by CDC Week, Missouri, 2016-2020[*]



[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).Data Source: Missouri Health Information Surveillance System (WebSurv).

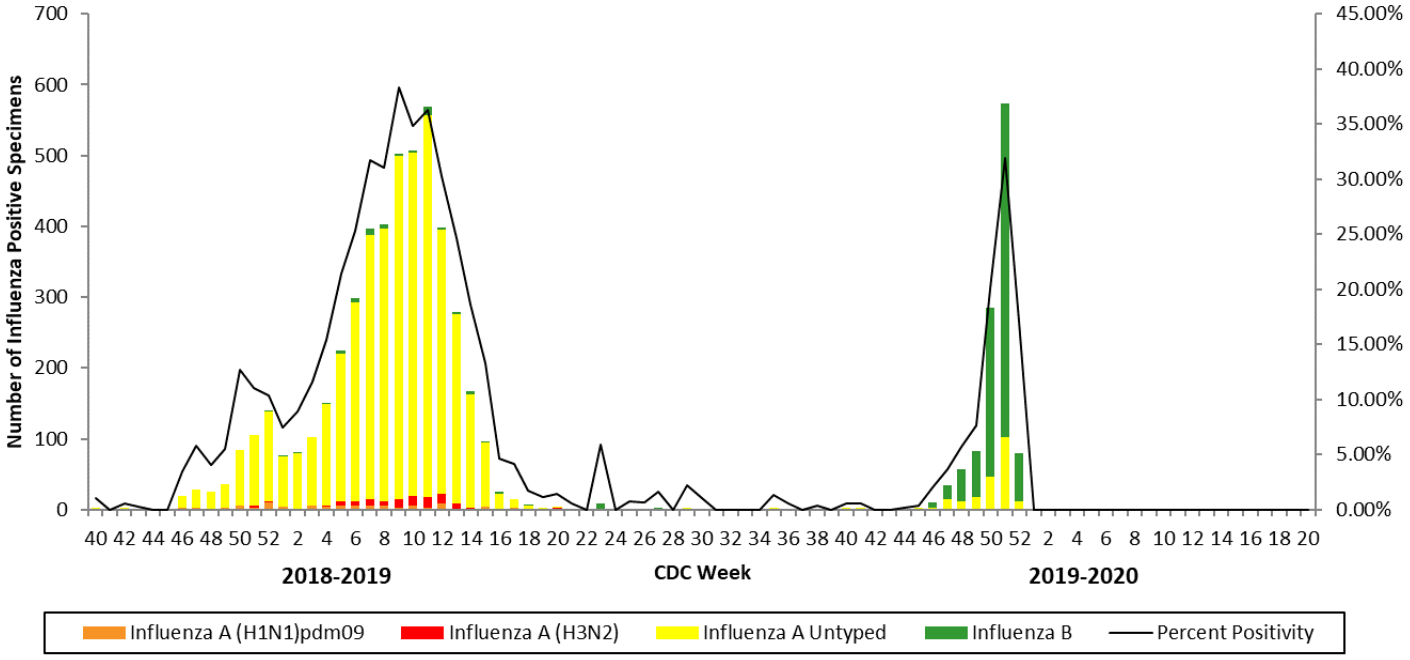
Figure 5. Percentage of Outpatient Visits for Influenza-like Illness (ILI), Missouri Outpatient ILI Surveillance Network (ILINet) 2016-2020*†



*The ILINet Region 7 (MO, IA, KS, NE) baseline is the mean percentage of patient visits for ILI during non-influenza weeks for the previous three seasons, plus two standard deviations. A non-influenza week is defined as periods of two or more consecutive weeks in which each week accounted for less than 2% of the season's total number of specimens that tested positive for influenza. Data Source: U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Centers for Disease Control and Prevention (CDC).

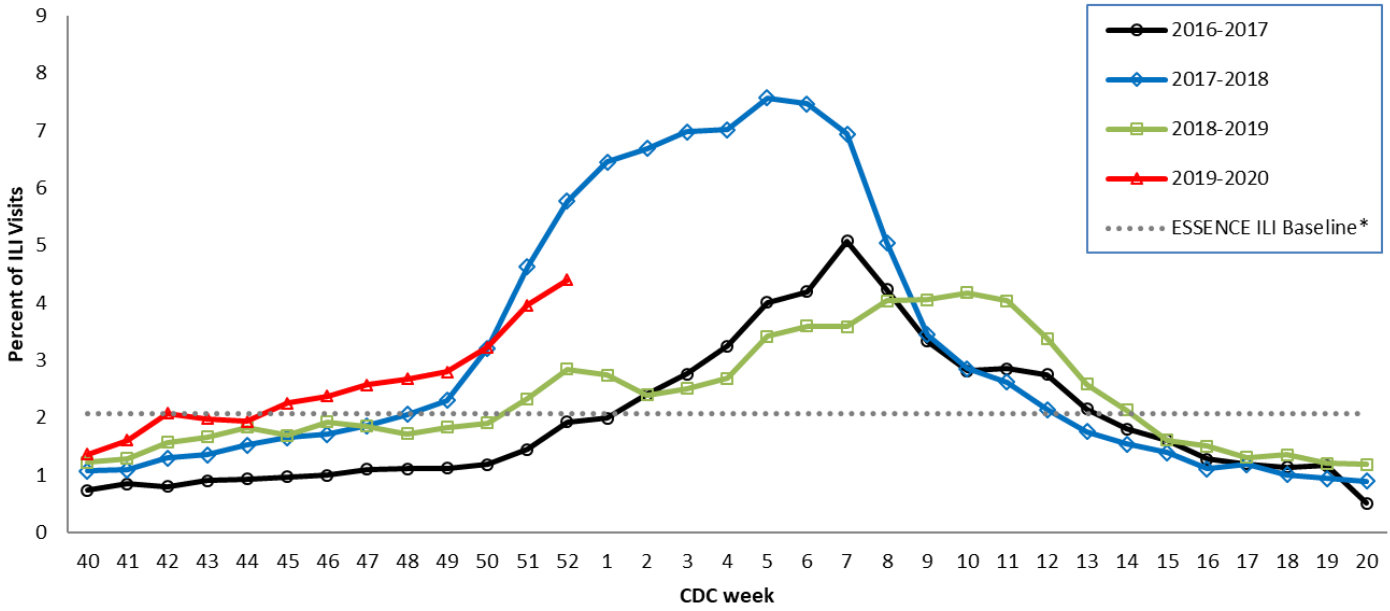
†2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).

Figure 6. Season-to-Date PCR (+) Tests for Influenza in Missouri



Data Source: National Respiratory and Enteric Virus Surveillance System (NREVSS), Centers for Disease Control and Prevention (CDC).
2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).

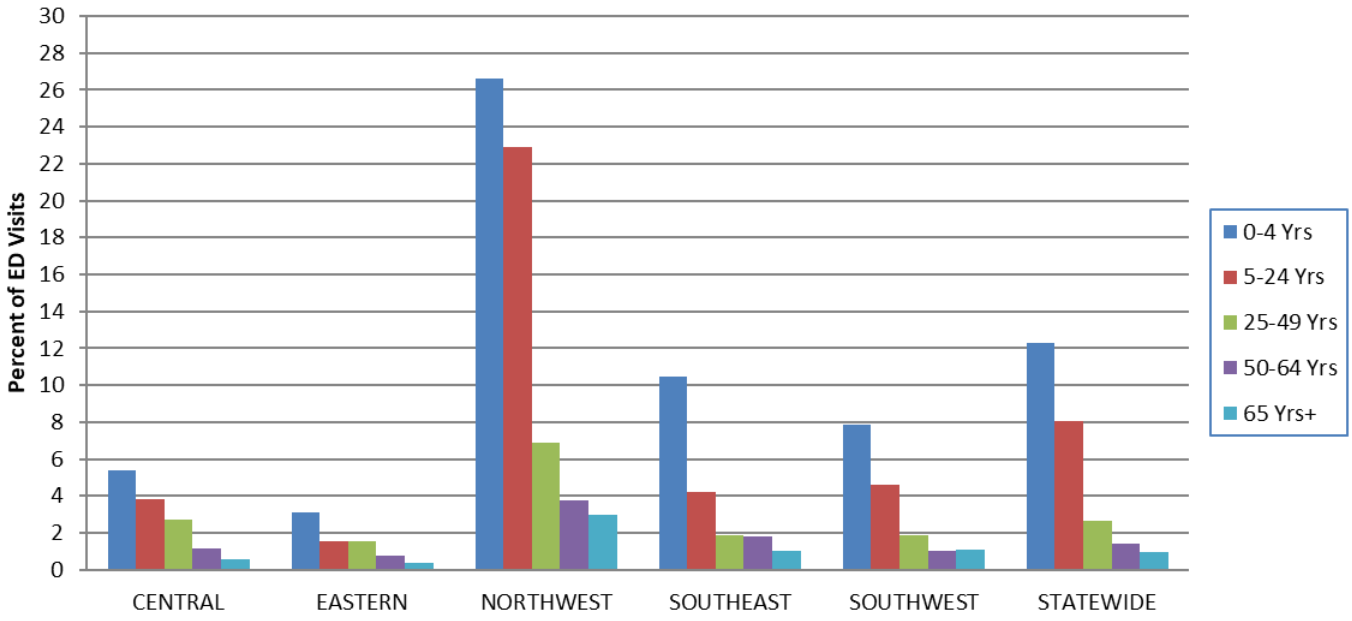
Figure 7. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, 2016-2020 Influenza Seasons*‡



*The ESSENCE ILI Baseline is the mean percent of ILI visits for each week during the previous three years (2016-18) when percentage of ILI visits were less than 2% of total visits, plus two standard deviations. Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.

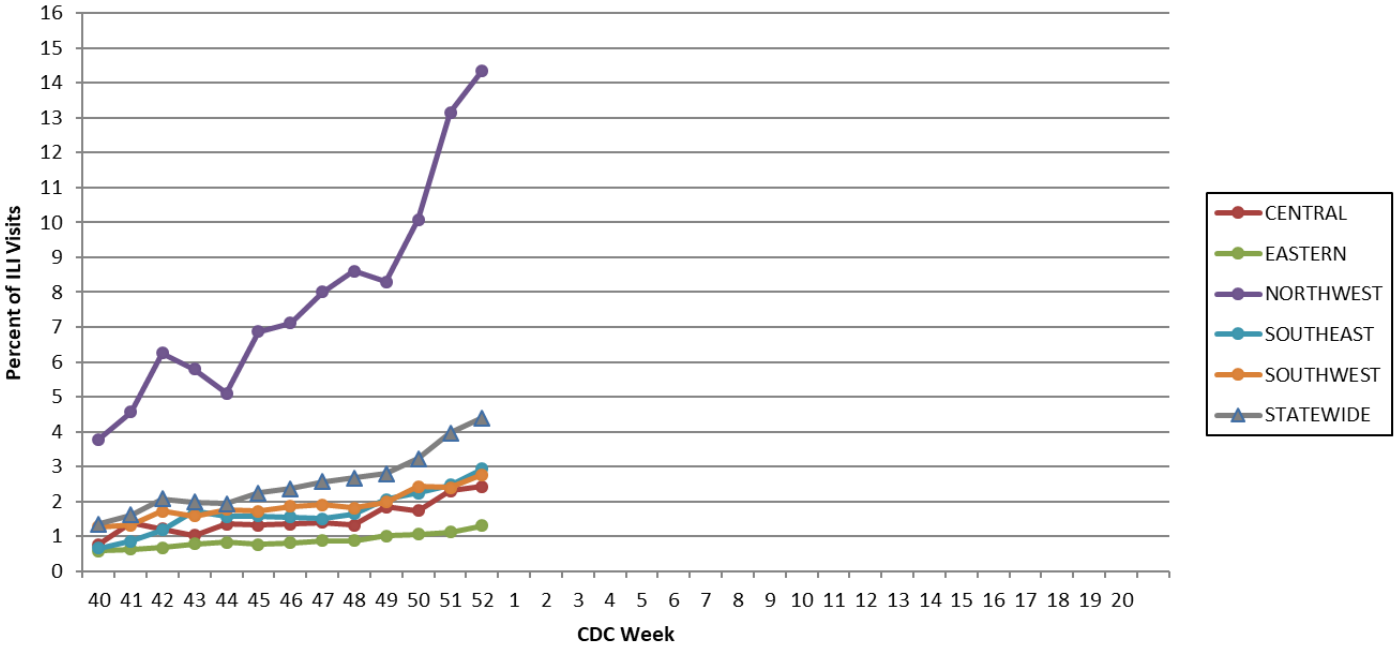
‡The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 8. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Age Group, Region and Statewide, Week 52, 2019*



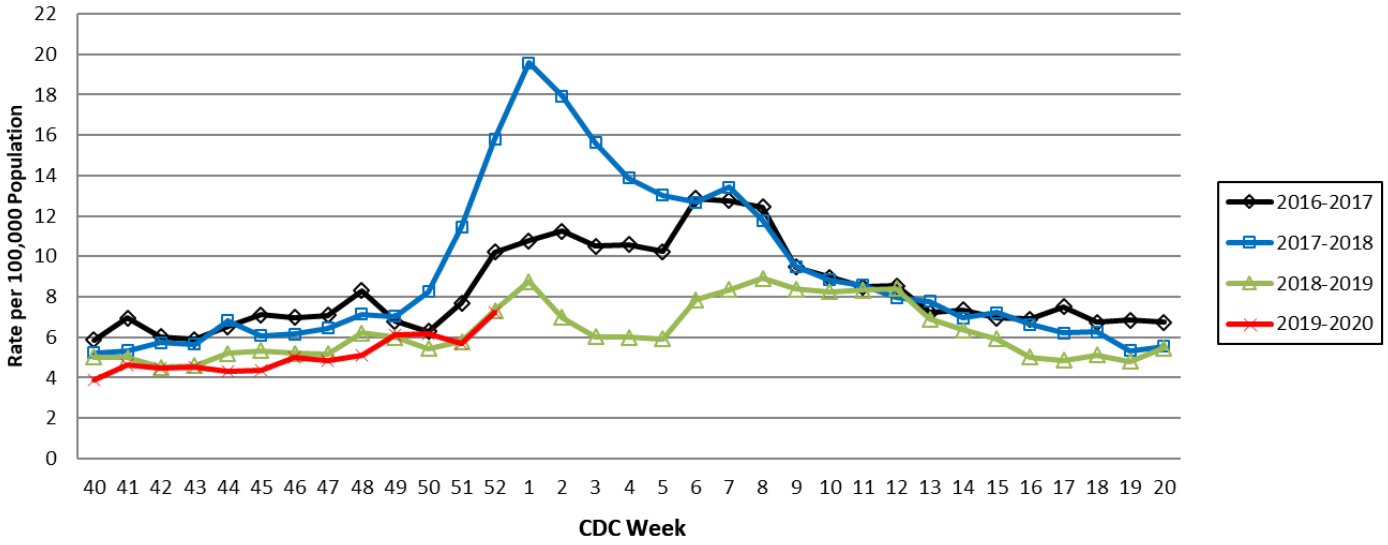
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 9. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Region and Statewide, 2019-2020 Influenza Season*



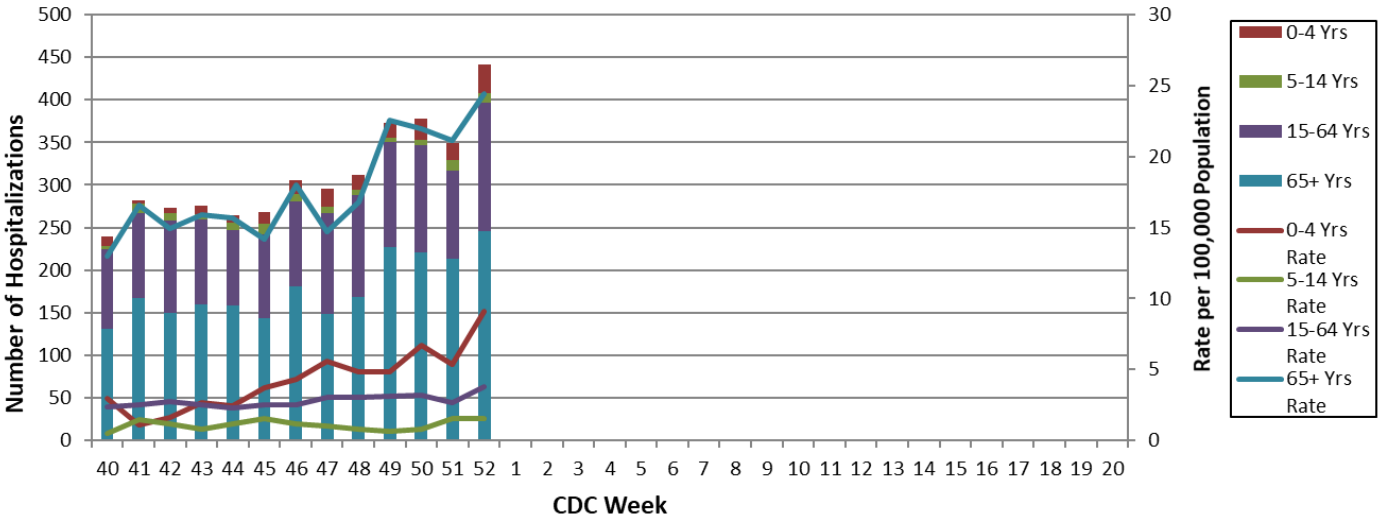
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 10. Weekly Rate of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Missouri Hospitals, 2016-2020 Influenza Seasons



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.
Population data from Missouri Census Data Center 2017 (https://census.missouri.edu).

Figure 11. Number of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Participating Missouri Hospitals, by Age Group, Week 52, 2019-2020 Influenza Season



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.

Additional Influenza Data Sources:

Centers for Disease Control and Prevention: National Influenza Surveillance (FluView):
http://www.cdc.gov/flu/weekly/fluactivitysurv.htm

The National Respiratory and Enteric Virus Surveillance System (NREVSS):
https://www.cdc.gov/surveillance/nrevss/

World Health Organization: International Influenza Surveillance:
http://www.who.int/influenza/surveillance_monitoring/en/

Missouri Weekly Influenza Surveillance Report
2019-2020 Influenza Season[1]

Week 1: December 29, 2019 – January 4, 2020

All data are preliminary and may change as more reports are received.

Summary:

- The estimated influenza activity in Missouri is Widespread[2].

- A total of 2,272 laboratory-positive[3] influenza cases (830 influenza A, 1,424 influenza B, and 18 untyped) were reported during Week 1. The season-to-date total of laboratory-positive influenza cases is 11,171 (34.7% influenza A, 64.3% influenza B, and 1% untyped). No laboratory-positive cases of influenza were reported by the Missouri State Public Health Laboratory (MSPHL) during Week 1. The percentage of respiratory specimens testing positive for influenza in Missouri laboratories reporting to the National Respiratory and Enteric Virus Surveillance System (NREVSS) decreased during Week 1 (Figure 6).

- Influenza-like illness (ILI) activity was above baseline for the Missouri Outpatient ILI Surveillance Network (ILINet) and for the hospital emergency room visit chief complaint data reported through ESSENCE. The reported percentage of visits for ILI was 5.06% (Figure 5) and 4.3% (Figure 7) through ILINet and ESSENCE respectively.[4] The ILI data from a small number of sites located in the Northwest Region of the state is currently unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

- A season-to-date total of 11 influenza-associated deaths have been reported in Missouri as of Week 1.[5] During Week 52, 30 deaths involving Pneumonia and Influenza (P&I) were reported to the Bureau of Vital Records, resulting in a season-to-date total of 474 P&I associated deaths in Missouri.[6]

- No influenza or ILI-associated outbreaks or school closures have been reported in Missouri as of Week 1.

- Seasonal influenza activity in the United States is high and continued to increase during Week 52. National influenza surveillance information is prepared by CDC and is included in the weekly FluView report, which is available online at http://www.cdc.gov/flu/weekly/fluactivitysurv.htm.

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[1]The 2019-2020 influenza season begins CDC Week 40 (week ending October 5, 2019) and ends CDC Week 39 (week ending September 26, 2020).

[2]Widespread is defined as: Outbreaks of influenza or increases in ILI cases and recent laboratory-confirmed influenza in at least half the regions of the state with recent laboratory evidence of influenza in the state.

[3]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.

[4]Influenza-like illness (ILI) is defined by ILINet as fever (temperature of 100ºF [37.8ºC] or greater) and a cough and/or a sore throat without a known cause other than influenza. ILI is defined by ESSENCE as Emergency Department chief complaints for Influenza or (FeverPlus and (Cough or SoreThroat) and not NonILIFevers).

[5]All influenza-associated deaths became reportable in Missouri in 2016. These reports are verified by local public health agencies and DHSS.

[6]The P&I data are obtained from vital statistics data using ICD-10 codes, which are available one week later. The P&I data for the CDC Week provided is the most current data available.

Surveillance Data:

Interactive Maps

The jurisdiction-specific influenza data are provided though interactive maps available at http://bit.ly/moflu19. *Click on the jurisdiction to view the influenza data specific to that jurisdiction.*

- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, CDC Week 1**
- **Reported Week-specific Rate per 100,000 Population, CDC Week 1**
- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, Season-to-Date**
- **Reported Rate per 100,000 Population, Season-to-Date**

Data Figures

Figure 1. Number of Laboratory-positive† Influenza Cases by Influenza Type, Missouri, CDC Week 1 (December 29, 2019 – January 4, 2020)*

Influenza Type	Week 51	Week 52	Week 1	2019-2020* Season-to-Date
Influenza A	603	968	830	3,879
Influenza B	1,682	1,856	1,424	7,182
Influenza Unknown Or Untyped	19	28	18	110
Total	2,304	2,852	2,272	11,171

†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv).

Figure 2. Number of Laboratory-positive† Influenza Cases and Case Rates by Age Group, Missouri, CDC Week 1 (December 29, 2019 – January 4, 2020)*‡

Age Group	Week 1 Cases	Week 1 Rate‡	2019-2020* Season-to-Date	2019-2020* Season-to-Date Rate‡
00-04	506	135.16	2,031	542.53
05-24	798	49.73	4,701	292.99
25-49	616	32.19	2,770	144.76
50-64	206	16.66	1,033	83.55
65+	146	15.29	636	66.60
Total	2,272	37.35	11,171	183.62

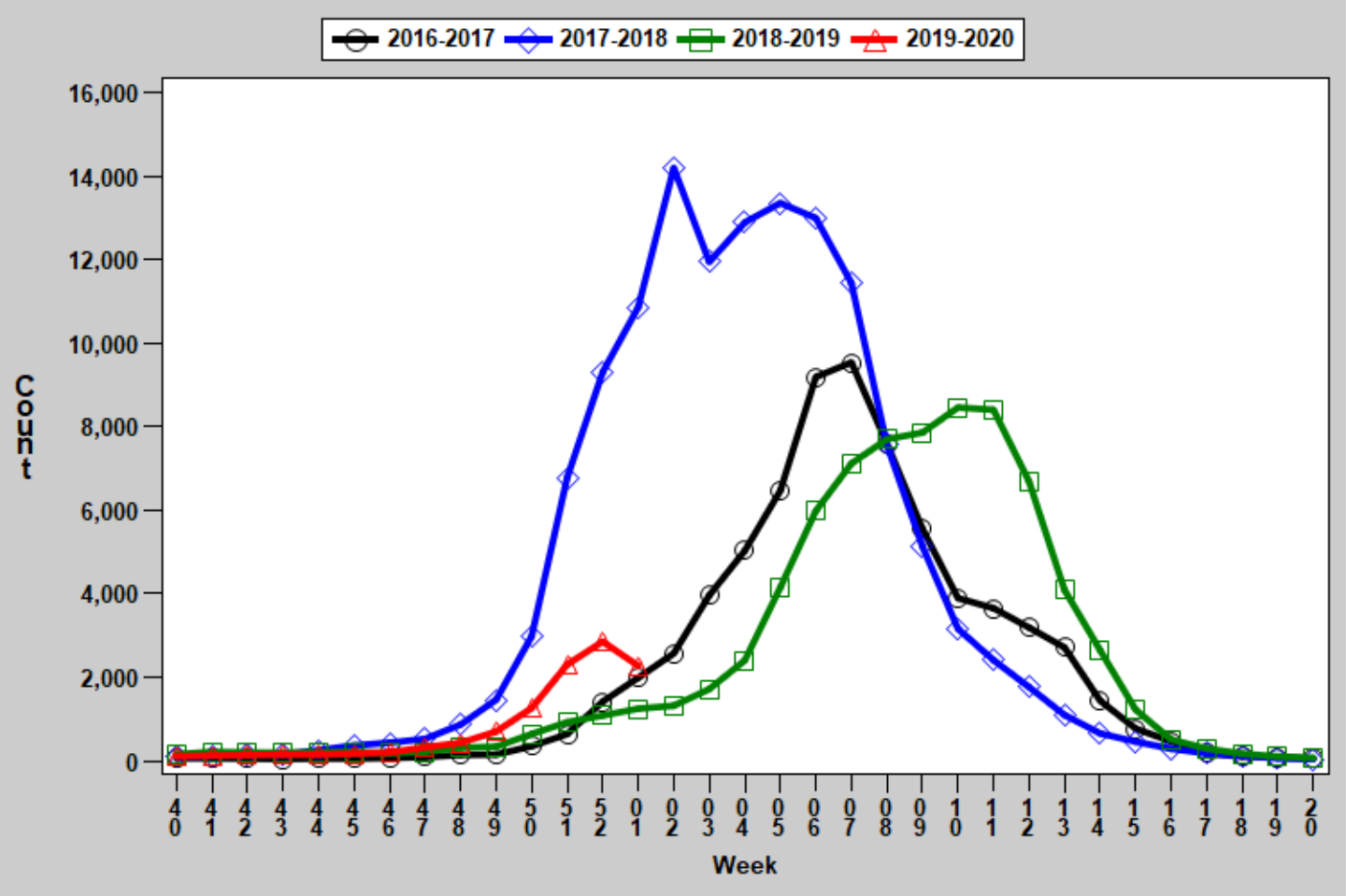
†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
‡Incidence Rate per 100,000 population

Figure 3. Number of Laboratory-positive[†] Influenza Cases and Case Rates by Region, Missouri, CDC Week 1 (December 29, 2019 – January 4, 2020)[*‡]

Region	Week 1 Cases	Week 1 Rate[‡]	2019-2020* Season-to-Date	2019-2020* Season-to-Date Rate[‡]
Central	238	35.16	1,511	223.19
Eastern	437	19.28	1,818	80.22
Northwest	1,043	65.29	5,499	344.22
Southeast	219	46.43	1,010	214.12
Southwest	335	31.27	1,333	124.43
Total	2,272	37.35	11,171	183.62

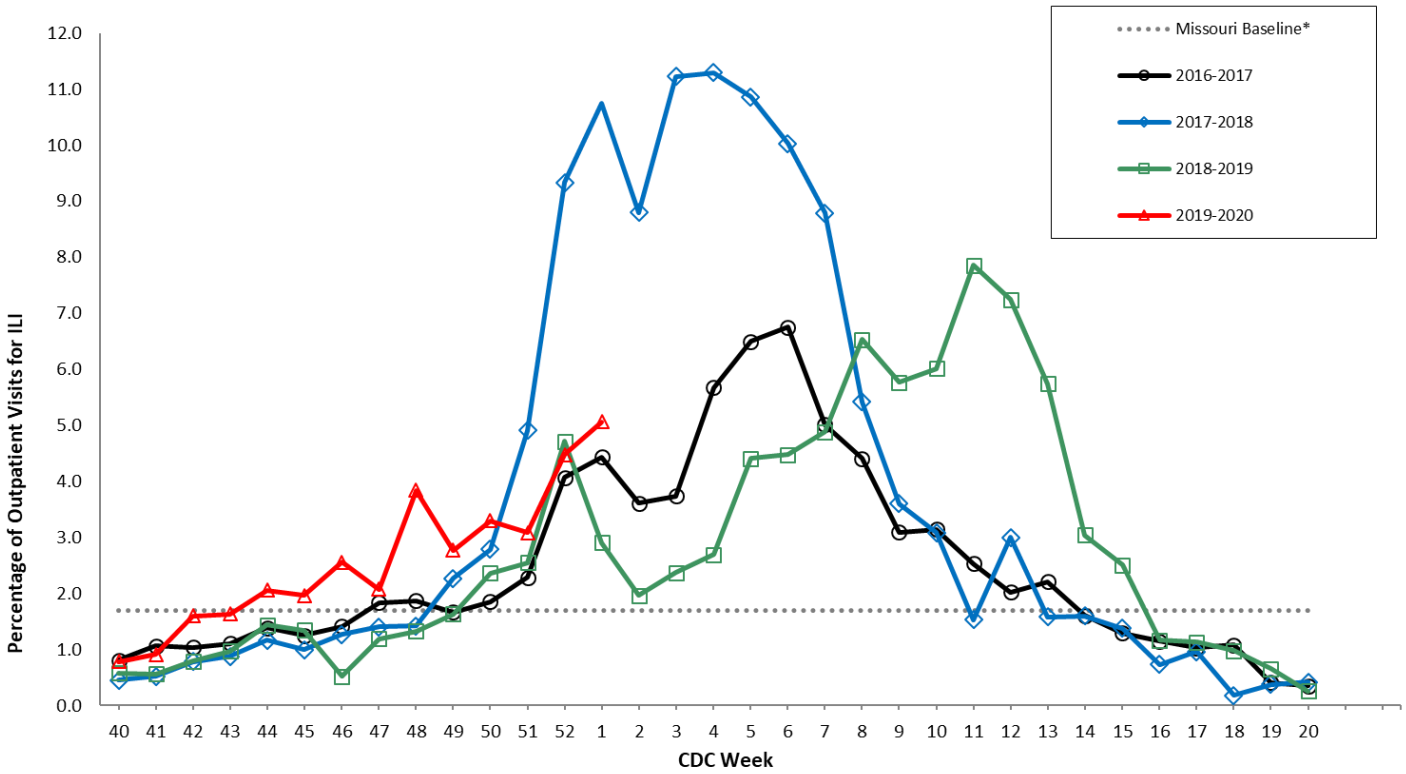
[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
[‡]Incidence Rate per 100,000 population

Figure 4. Number of Laboratory-positive[†] Influenza Cases by CDC Week, Missouri, 2016-2020[*]



[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).Data Source: Missouri Health Information Surveillance System (WebSurv).

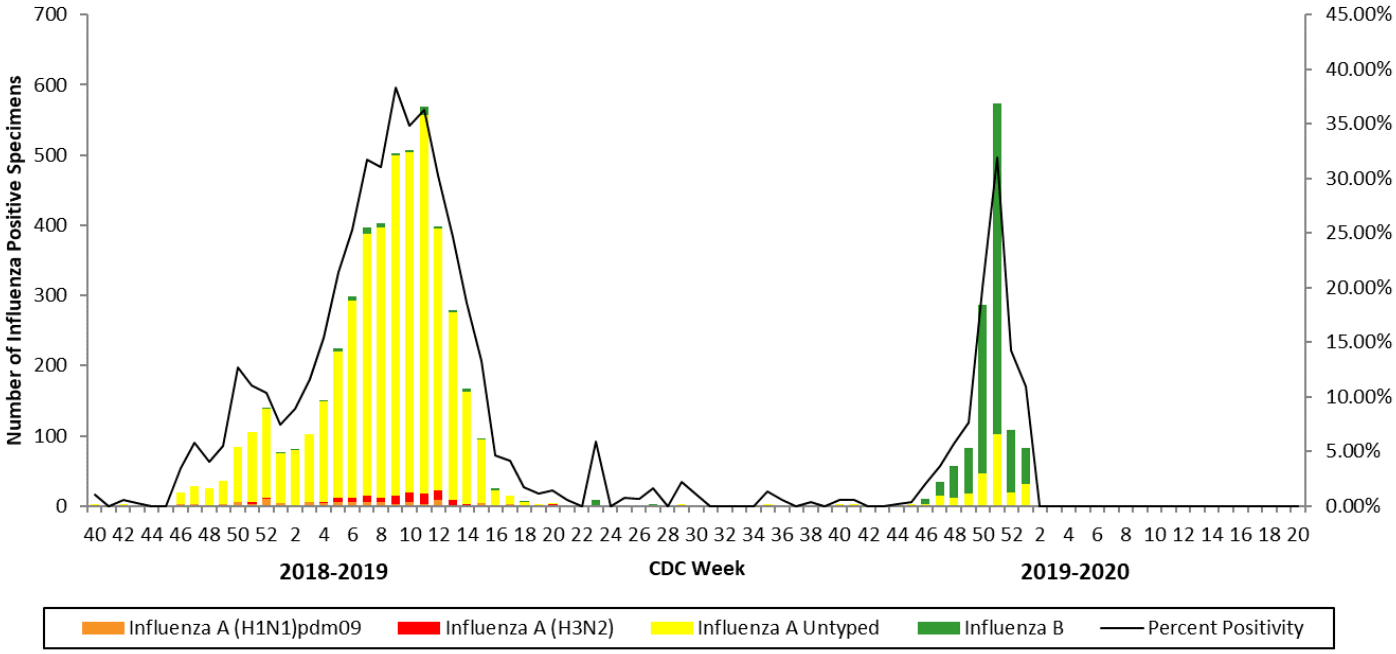
Figure 5. Percentage of Outpatient Visits for Influenza-like Illness (ILI), Missouri Outpatient ILI Surveillance Network (ILINet) 2016-2020*†



*The ILINet Region 7 (MO, IA, KS, NE) baseline is the mean percentage of patient visits for ILI during non-influenza weeks for the previous three seasons, plus two standard deviations. A non-influenza week is defined as periods of two or more consecutive weeks in which each week accounted for less than 2% of the season's total number of specimens that tested positive for influenza. Data Source: U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Centers for Disease Control and Prevention (CDC).

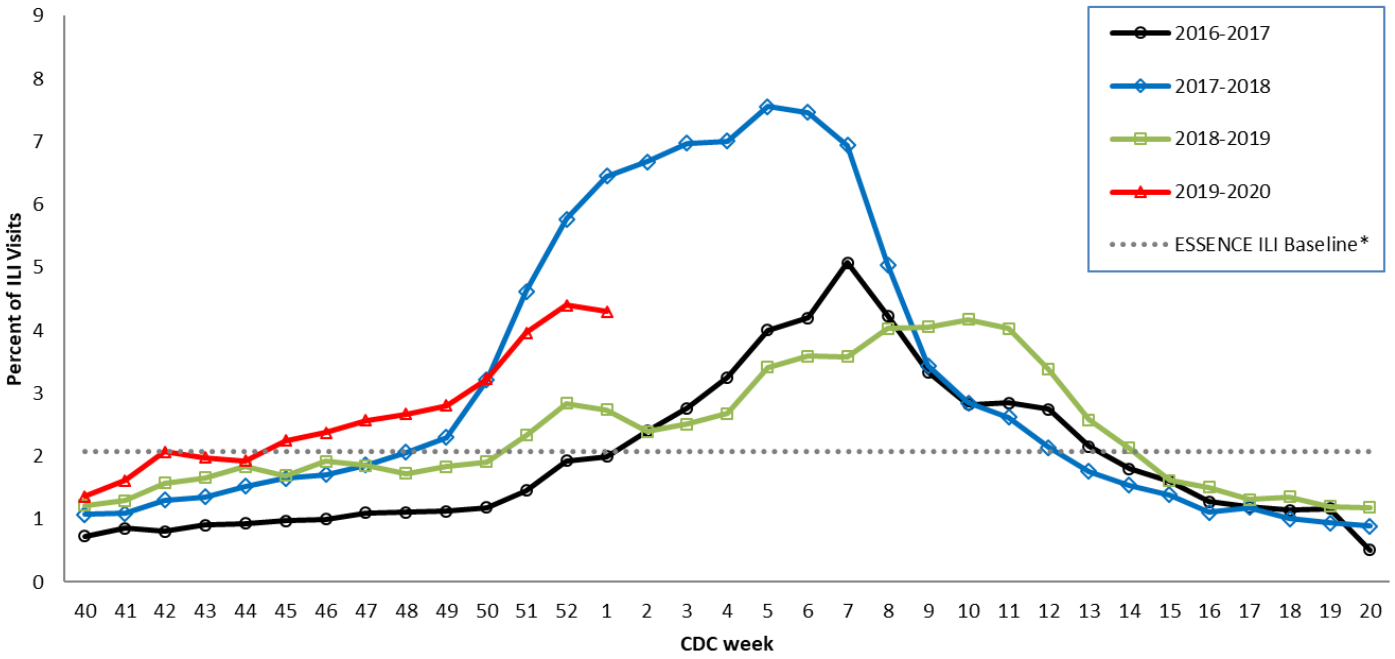
†2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).

Figure 6. Season-to-Date PCR (+) Tests for Influenza in Missouri



Data Source: National Respiratory and Enteric Virus Surveillance System (NREVSS), Centers for Disease Control and Prevention (CDC).
2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).

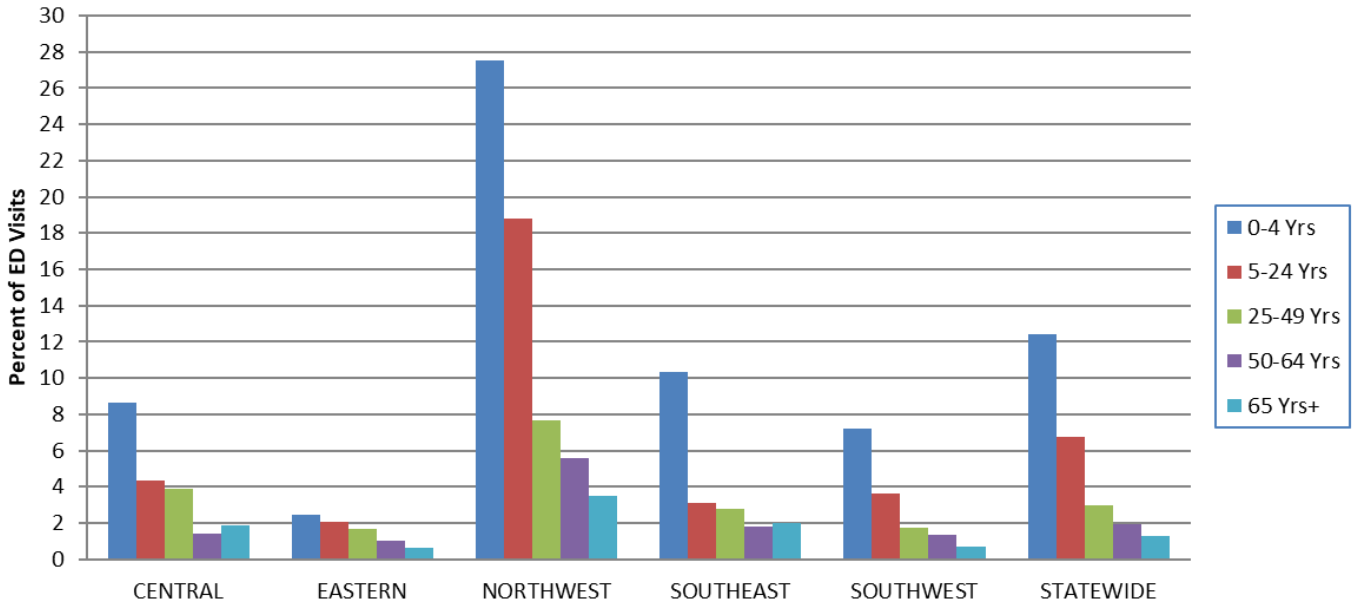
Figure 7. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, 2016-2020 Influenza Seasons*‡



*The ESSENCE ILI Baseline is the mean percent of ILI visits for each week during the previous three years (2016-18) when percentage of ILI visits were less than 2% of total visits, plus two standard deviations. Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.

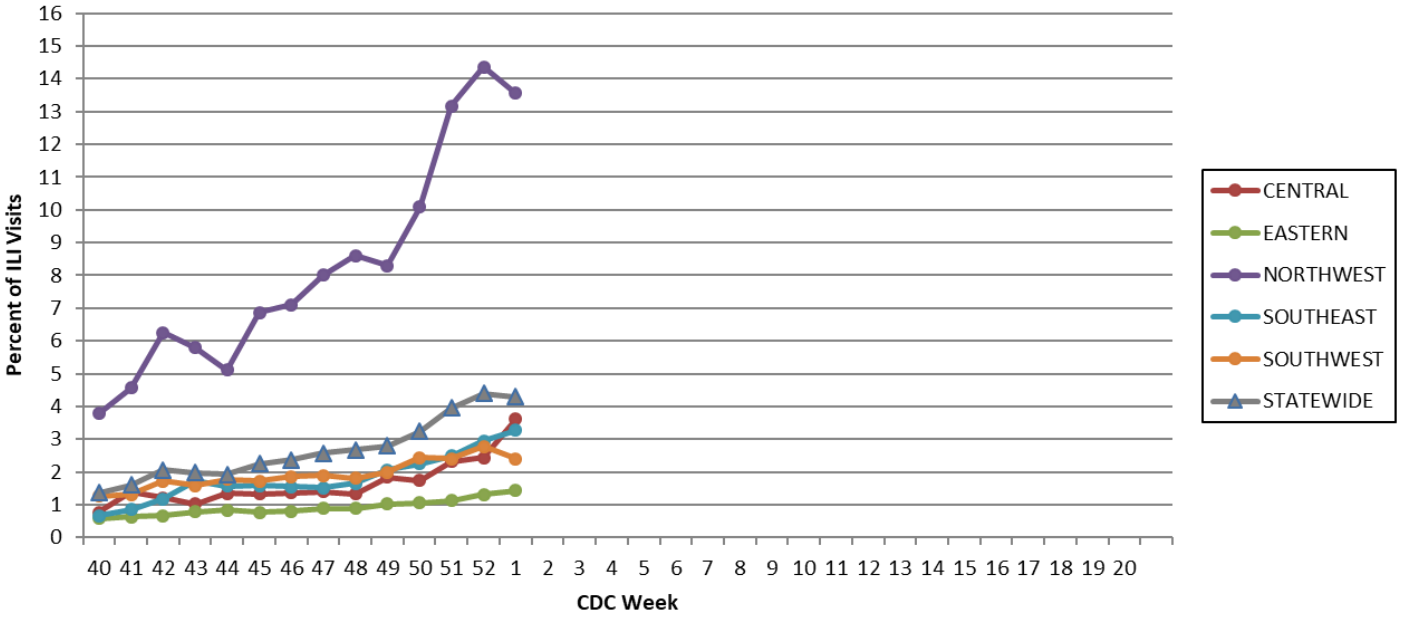
‡The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 8. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Age Group, Region and Statewide, Week 1, 2020*



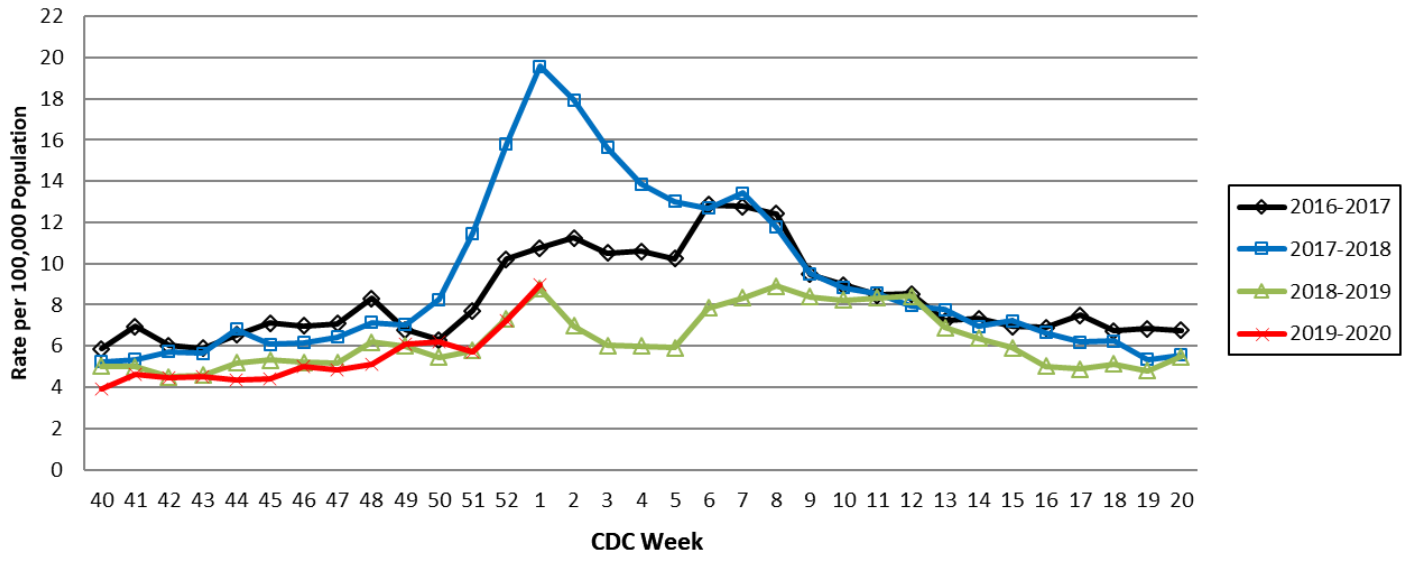
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 9. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Region and Statewide, 2019-2020 Influenza Season*



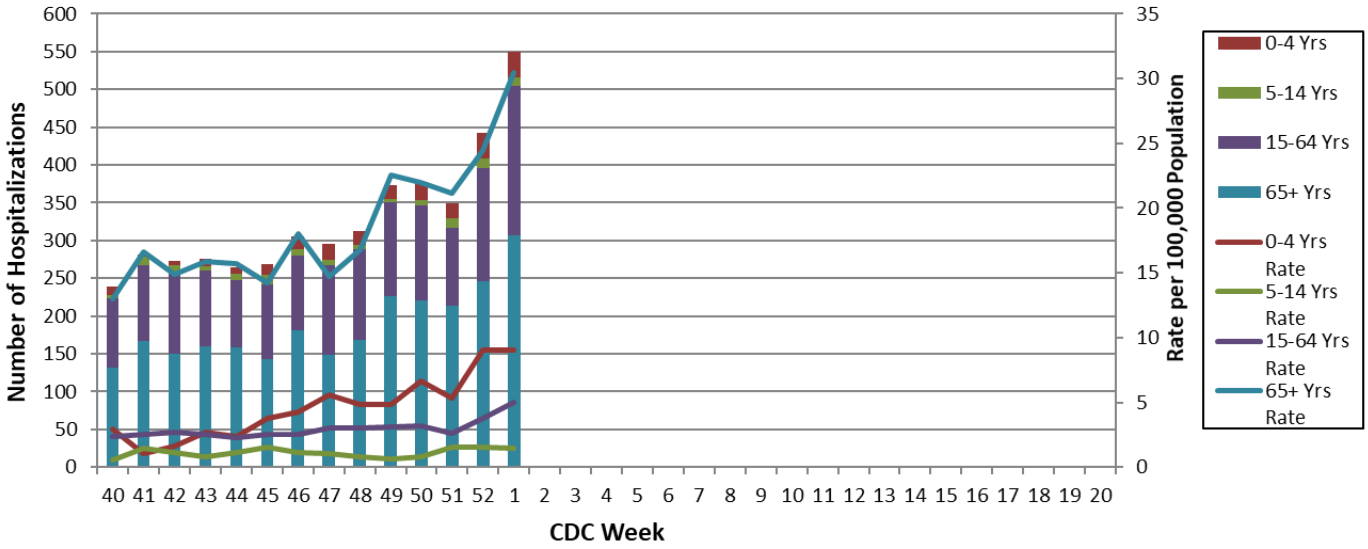
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 10. Weekly Rate of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Missouri Hospitals, 2016-2020 Influenza Seasons



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.
Population data from Missouri Census Data Center 2017 (https://census.missouri.edu).

Figure 11. Number of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Participating Missouri Hospitals, by Age Group, Week 1, 2019-2020 Influenza Season



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.

Additional Influenza Data Sources:

Centers for Disease Control and Prevention: National Influenza Surveillance (FluView):
http://www.cdc.gov/flu/weekly/fluactivitysurv.htm

The National Respiratory and Enteric Virus Surveillance System (NREVSS):
https://www.cdc.gov/surveillance/nrevss/

World Health Organization: International Influenza Surveillance:
http://www.who.int/influenza/surveillance_monitoring/en/

Missouri Weekly Influenza Surveillance Report
2019-2020 Influenza Season[1]

Week 2: January 5, 2020 – January 11, 2020

All data are preliminary and may change as more reports are received.

Summary:

- The estimated influenza activity in Missouri is Widespread[2].

- A total of 2,079 laboratory-positive[3] influenza cases (845 influenza A, 1,206 influenza B, and 28 untyped) were reported during Week 2. The season-to-date total of laboratory-positive influenza cases is 14,345 (35.9% influenza A, 63.0% influenza B, and 1.1% untyped). No laboratory-positive cases of influenza were reported by the Missouri State Public Health Laboratory (MSPHL) during Week 2. The percentage of respiratory specimens testing positive for influenza in Missouri laboratories reporting to the National Respiratory and Enteric Virus Surveillance System (NREVSS) decreased during Week 2 (Figure 6).

- Influenza-like illness (ILI) activity was at baseline for the Missouri Outpatient ILI Surveillance Network (ILINet) and above baseline for the hospital emergency room visit chief complaint data reported through ESSENCE. The reported percentage of visits for ILI was 1.74% (Figure 5) and 3.63% (Figure 7) through ILINet and ESSENCE respectively.[4] The ILI data from a small number of sites located in the Northwest Region of the state is currently unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

- A season-to-date total of 16 influenza-associated deaths have been reported in Missouri as of Week 2.[5] During Week 1, 37 deaths involving Pneumonia and Influenza (P&I) were reported to the Bureau of Vital Records, resulting in a season-to-date total of 511 P&I associated deaths in Missouri.[6]

- No influenza or ILI-associated outbreaks or school closures have been reported in Missouri as of Week 2.

- Seasonal influenza activity in the United States remains high during Week 1. National influenza surveillance information is prepared by CDC and is included in the weekly FluView report, which is available online at http://www.cdc.gov/flu/weekly/fluactivitysurv.htm.

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[1]The 2019-2020 influenza season begins CDC Week 40 (week ending October 5, 2019) and ends CDC Week 39 (week ending September 26, 2020).

[2]Widespread is defined as: Outbreaks of influenza or increases in ILI cases and recent laboratory-confirmed influenza in at least half the regions of the state with recent laboratory evidence of influenza in the state.

[3]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.

[4]Influenza-like illness (ILI) is defined by ILINet as fever (temperature of 100ºF [37.8ºC] or greater) and a cough and/or a sore throat without a known cause other than influenza. ILI is defined by ESSENCE as Emergency Department chief complaints for Influenza or (FeverPlus and (Cough or SoreThroat) and not NonILIFevers).

[5]All influenza-associated deaths became reportable in Missouri in 2016. These reports are verified by local public health agencies and DHSS.

[6]The P&I data are obtained from vital statistics data using ICD-10 codes, which are available one week later. The P&I data for the CDC Week provided is the most current data available.

Surveillance Data:

Interactive Maps

The jurisdiction-specific influenza data are provided though interactive maps available at http://bit.ly/moflu19. *Click on the jurisdiction to view the influenza data specific to that jurisdiction.*

- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, CDC Week 2**
- **Reported Week-specific Rate per 100,000 Population, CDC Week 2**
- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, Season-to-Date**
- **Reported Rate per 100,000 Population, Season-to-Date**

Data Figures

Figure 1. Number of Laboratory-positive† Influenza Cases by Influenza Type, Missouri, CDC Week 2 (January 5, 2020 – January 11, 2020)*

Influenza Type	Week 52	Week 1	Week 2	2019-2020* Season-to-Date
Influenza A	1,015	1,172	845	5,150
Influenza B	1,977	1,879	1,206	9,041
Influenza Unknown Or Untyped	33	29	28	154
Total	3,025	3,080	2,079	14,345

†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv).

Figure 2. Number of Laboratory-positive† Influenza Cases and Case Rates by Age Group, Missouri, CDC Week 2 (January 5, 2020 – January 11, 2020)*‡

Age Group	Week 2 Cases	Week 2 Rate‡	2019-2020* Season-to-Date	2019-2020* Season-to-Date Rate‡
00-04	433	115.66	2,652	708.41
05-24	671	41.82	5,791	360.92
25-49	609	31.83	3,679	192.27
50-64	209	16.90	1,363	110.24
65+	157	16.44	860	90.06
Total	2,079	34.17	14,345	235.80

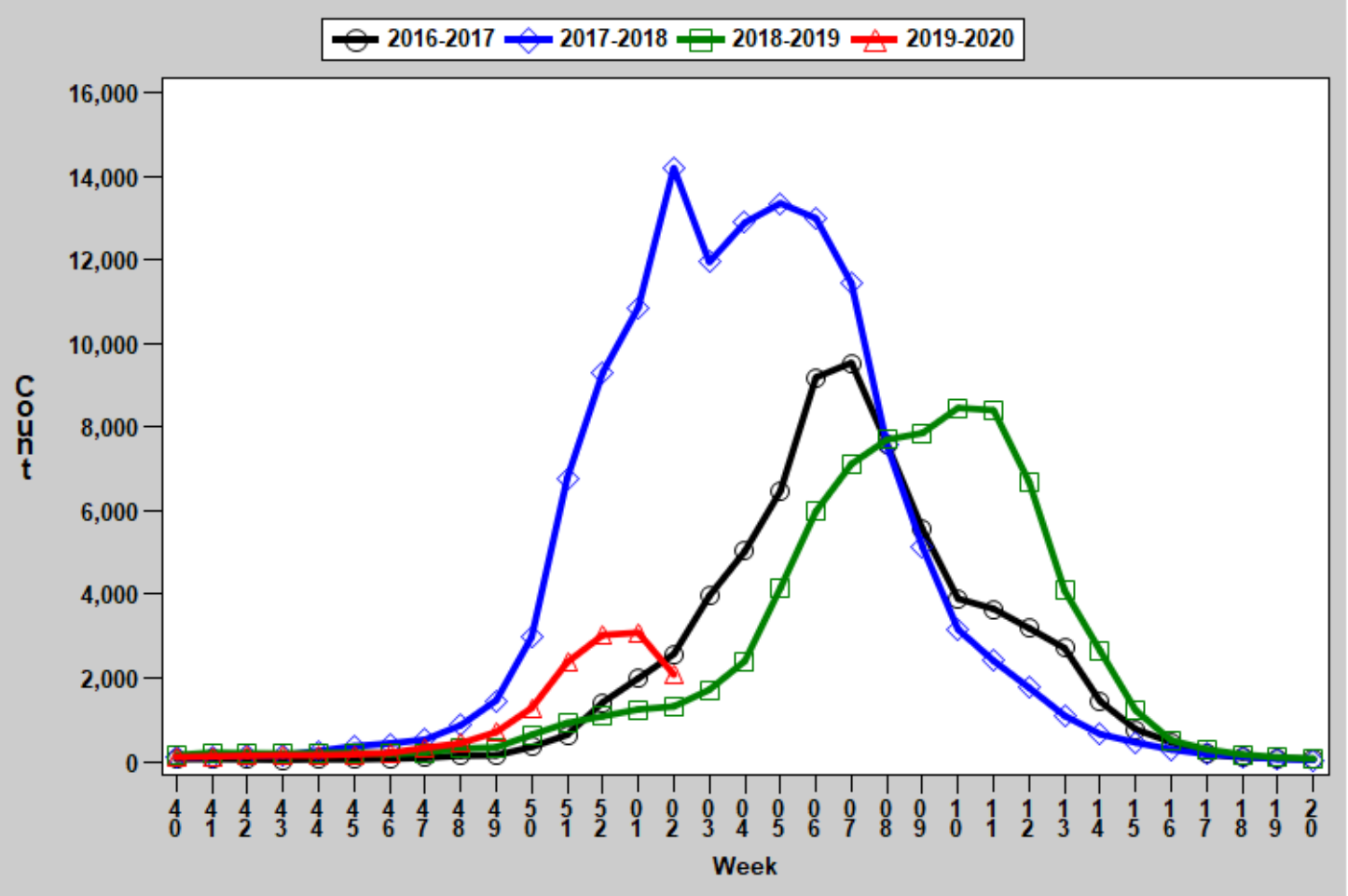
†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
‡Incidence Rate per 100,000 population

Figure 3. Number of Laboratory-positive[†] Influenza Cases and Case Rates by Region, Missouri, CDC Week 2 (January 5, 2020 – January 11, 2020)[*‡]

Region	Week 2 Cases	Week 2 Rate[‡]	2019-2020* Season-to-Date	2019-2020* Season-to-Date Rate[‡]
Central	198	29.25	1,926	284.49
Eastern	419	18.49	2,389	105.42
Northwest	1,012	63.35	7,009	438.74
Southeast	148	31.38	1,217	258.00
Southwest	302	28.19	1,804	168.39
Total	2,079	34.17	14,345	235.80

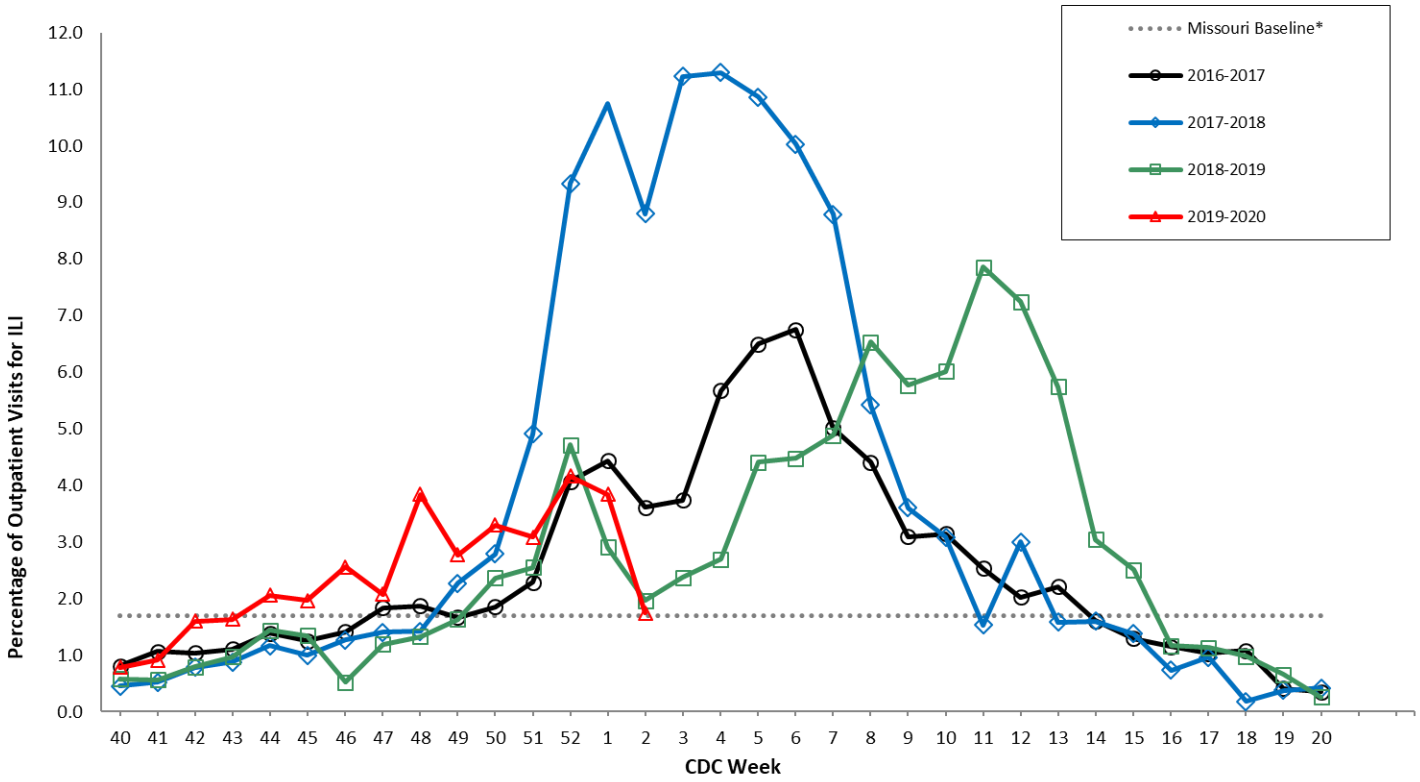
[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
[‡]Incidence Rate per 100,000 population

Figure 4. Number of Laboratory-positive[†] Influenza Cases by CDC Week, Missouri, 2016-2020[*]



[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).Data Source: Missouri Health Information Surveillance System (WebSurv).

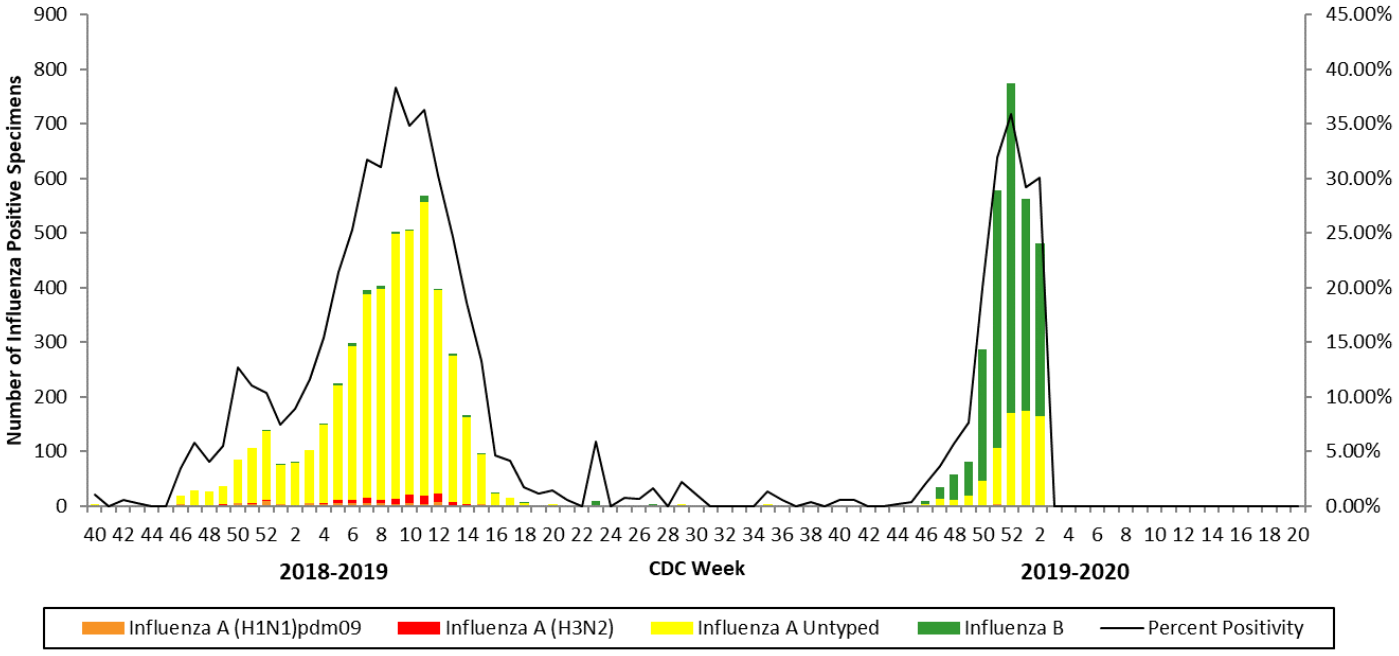
Figure 5. Percentage of Outpatient Visits for Influenza-like Illness (ILI), Missouri Outpatient ILI Surveillance Network (ILINet) 2016-2020*†



*The ILINet Region 7 (MO, IA, KS, NE) baseline is the mean percentage of patient visits for ILI during non-influenza weeks for the previous three seasons, plus two standard deviations. A non-influenza week is defined as periods of two or more consecutive weeks in which each week accounted for less than 2% of the season's total number of specimens that tested positive for influenza. Data Source: U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Centers for Disease Control and Prevention (CDC).

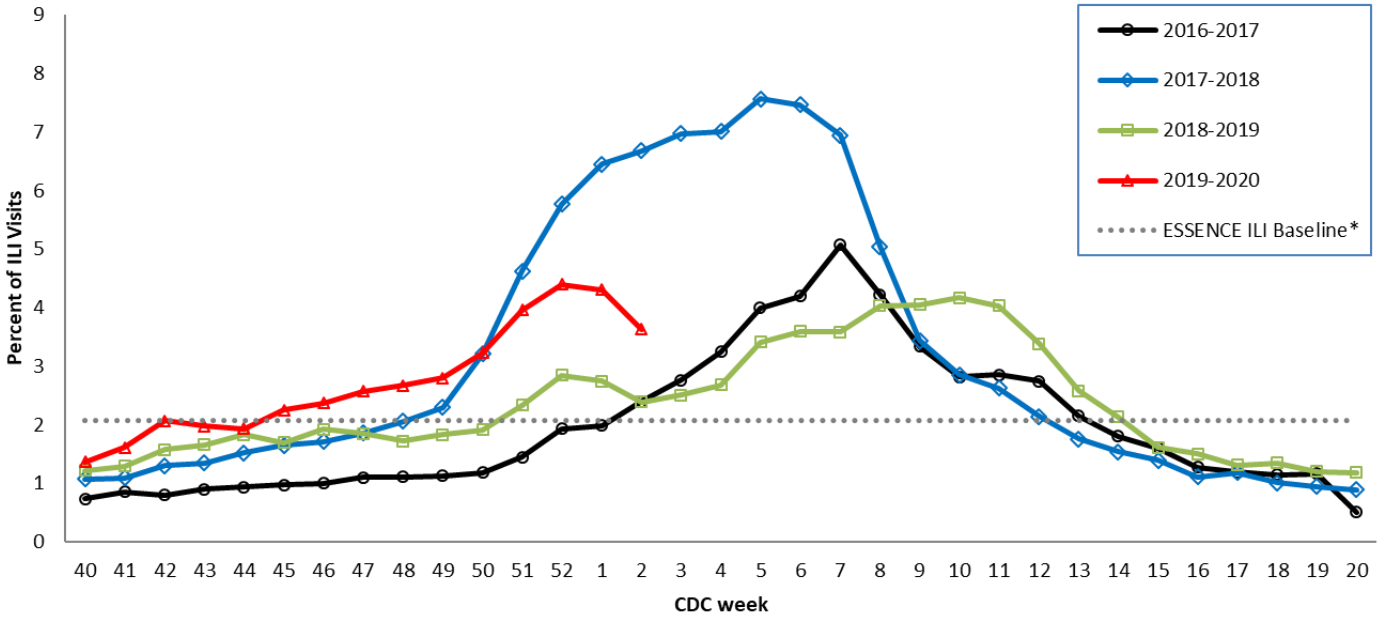
†2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).

Figure 6. Season-to-Date PCR (+) Tests for Influenza in Missouri



Data Source: National Respiratory and Enteric Virus Surveillance System (NREVSS), Centers for Disease Control and Prevention (CDC).
2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).

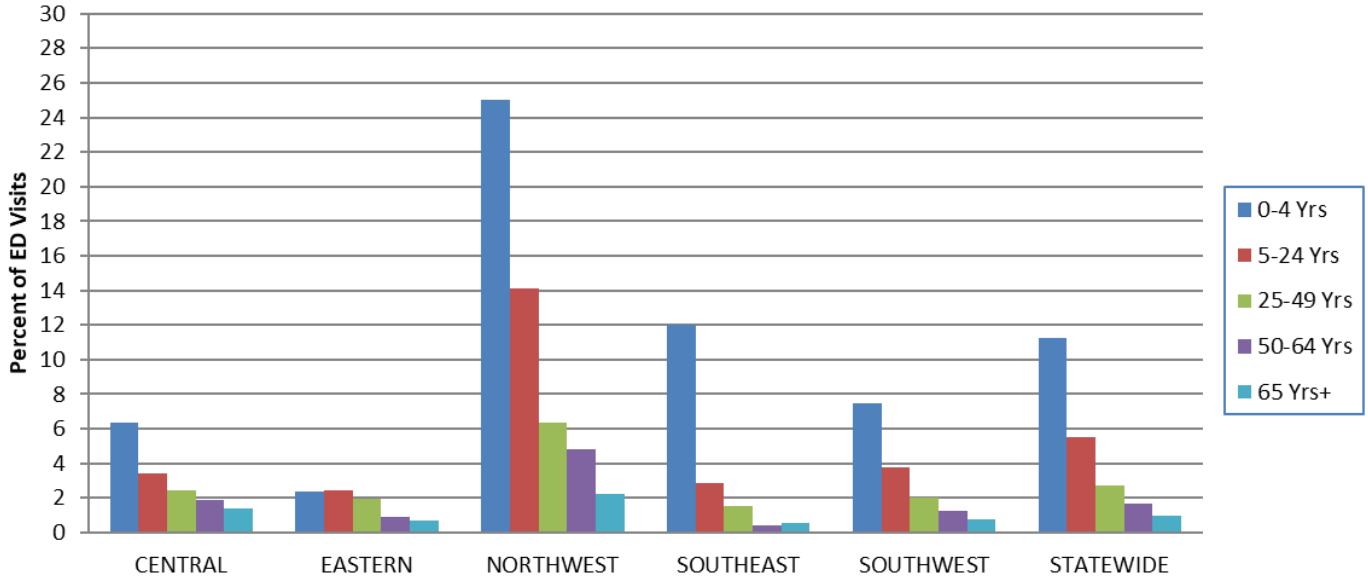
Figure 7. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, 2016-2020 Influenza Seasons*‡



*The ESSENCE ILI Baseline is the mean percent of ILI visits for each week during the previous three years (2016-18) when percentage of ILI visits were less than 2% of total visits, plus two standard deviations. Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.

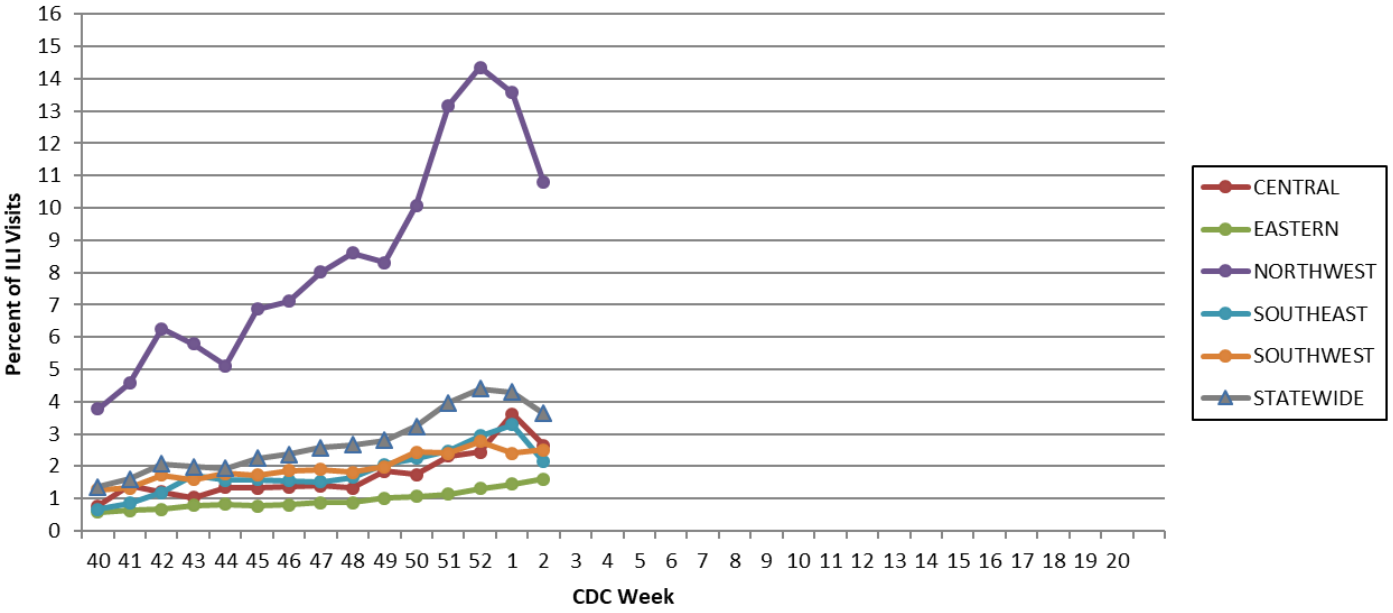
‡The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 8. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Age Group, Region and Statewide, Week 2, 2020*



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 9. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Region and Statewide, 2019-2020 Influenza Season*



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
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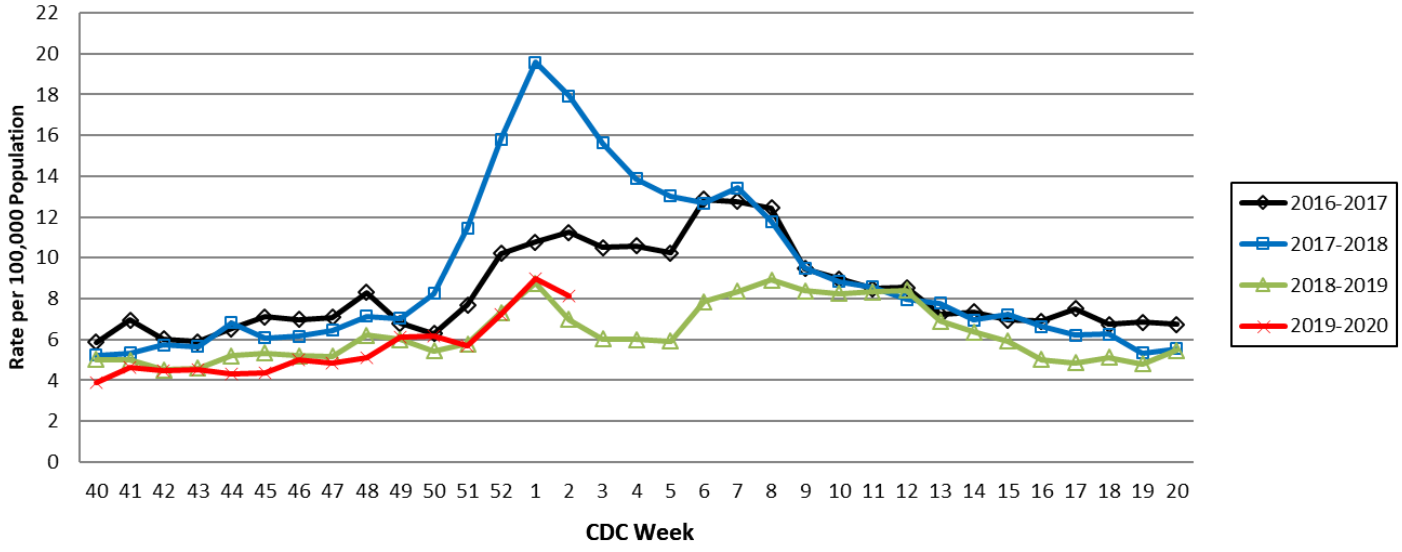
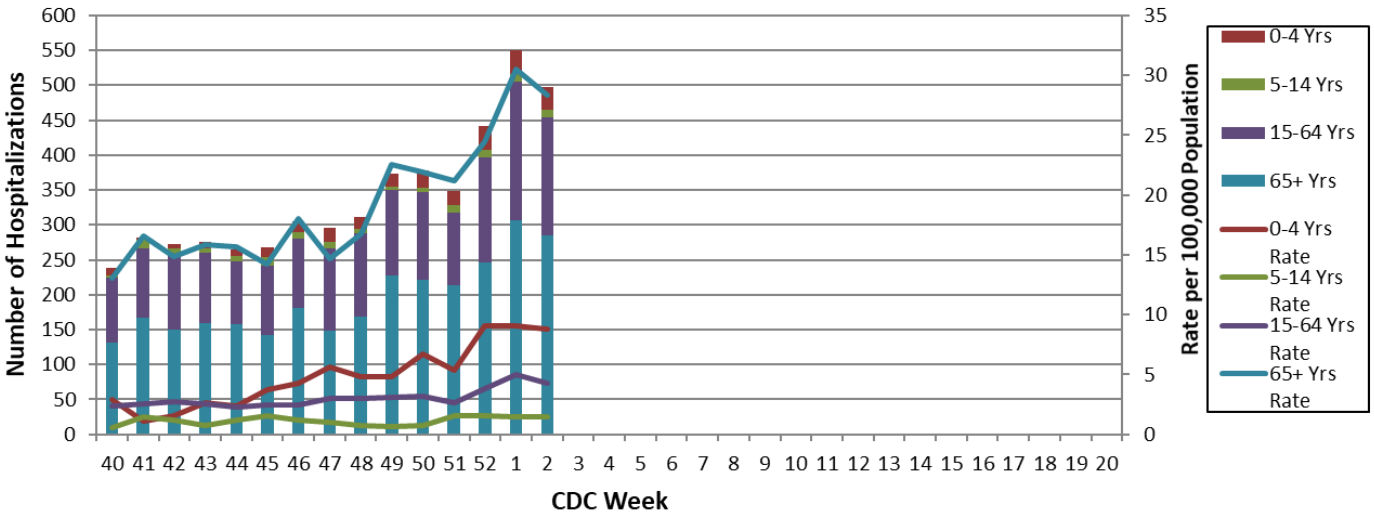
Figure 10. Weekly Rate of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Missouri Hospitals, 2016-2020 Influenza Seasons



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.
Population data from Missouri Census Data Center 2017 (https://census.missouri.edu).

Figure 11. Number of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Participating Missouri Hospitals, by Age Group, Week 2, 2019-2020 Influenza Season



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.

Additional Influenza Data Sources:

Centers for Disease Control and Prevention: National Influenza Surveillance (FluView):
http://www.cdc.gov/flu/weekly/fluactivitysurv.htm

The National Respiratory and Enteric Virus Surveillance System (NREVSS):
https://www.cdc.gov/surveillance/nrevss/

World Health Organization: International Influenza Surveillance:
http://www.who.int/influenza/surveillance_monitoring/en/

Missouri Weekly Influenza Surveillance Report
2019-2020 Influenza Season[1]

Week 3: January 12, 2020 – January 18, 2020 Revised

All data are preliminary and may change as more reports are received.

Summary:

- The estimated influenza activity in Missouri is Widespread[2].

- A total of 1,970 laboratory-positive[3] influenza cases (752 influenza A, 1,199 influenza B, and 19 untyped) were reported during Week 3. The season-to-date total of laboratory-positive influenza cases is 18,811 (35.5% influenza A, 63.4% influenza B, and 1.1% untyped). No laboratory-positive cases of influenza were reported by the Missouri State Public Health Laboratory (MSPHL) during Week 3. The percentage of respiratory specimens testing positive for influenza in Missouri laboratories reporting to the National Respiratory and Enteric Virus Surveillance System (NREVSS) increased during Week 3 (Figure 6).

- Influenza-like illness (ILI) activity above baseline for the Missouri Outpatient ILI Surveillance Network (ILINet) and for the hospital emergency room visit chief complaint data reported through ESSENCE. The reported percentage of visits for ILI was 4.03% (Figure 5) and 3.88% (Figure 7) through ILINet and ESSENCE respectively.[4] The ILI data from a small number of sites located in the Northwest Region of the state is currently unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

- A season-to-date total of 16 influenza-associated deaths have been reported in Missouri as of Week 3.[5] During Week 2, 77 deaths involving Pneumonia and Influenza (P&I) were reported to the Bureau of Vital Records, resulting in a season-to-date total of 588 P&I associated deaths in Missouri.[6] *

- No influenza or ILI-associated outbreaks or school closures have been reported in Missouri as of Week 3.

- Seasonal influenza activity in the United States declined slightly but remained high during Week 2. National influenza surveillance information is prepared by CDC and is included in the weekly FluView report, which is available online at http://www.cdc.gov/flu/weekly/fluactivitysurv.htm.

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[1]The 2019-2020 influenza season begins CDC Week 40 (week ending October 5, 2019) and ends CDC Week 39 (week ending September 26, 2020).

[2]Widespread is defined as: Outbreaks of influenza or increases in ILI cases and recent laboratory-confirmed influenza in at least half the regions of the state with recent laboratory evidence of influenza in the state.

[3]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.

[4]Influenza-like illness (ILI) is defined by ILINet as fever (temperature of 100ºF [37.8ºC] or greater) and a cough and/or a sore throat without a known cause other than influenza. ILI is defined by ESSENCE as Emergency Department chief complaints for Influenza or (FeverPlus and (Cough or SoreThroat) and not NonILIFevers).

[5]All influenza-associated deaths became reportable in Missouri in 2016. These reports are verified by local public health agencies and DHSS.

[6]The P&I data are obtained from vital statistics data using ICD-10 codes, which are available one week later. The P&I data for the CDC Week provided is the most current data available.

*An issue with the P&I data was identified that resulted in some P&I related deaths not to be reported in prior weeks. This issue has been corrected and all prior Influenza Weekly Reports that were impacted have been amended.

Surveillance Data:

Interactive Maps

The jurisdiction-specific influenza data are provided though interactive maps available at http://bit.ly/moflu19. *Click on the jurisdiction to view the influenza data specific to that jurisdiction.*

- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, CDC Week 3**
- **Reported Week-specific Rate per 100,000 Population, CDC Week 3**
- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, Season-to-Date**
- **Reported Rate per 100,000 Population, Season-to-Date**

Data Figures

Figure 1. Number of Laboratory-positive† Influenza Cases by Influenza Type, Missouri, CDC Week 3 (January 12, 2020 – January 18, 2020)*

Influenza Type	Week 1	Week 2	Week 3	2019-2020* Season-to-Date
Influenza A	1,402	1,178	752	6,676
Influenza B	2,345	1,797	1,199	11,933
Influenza Unknown Or Untyped	36	46	19	202
Total	3,783	3,021	1,970	18,811

†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv).

Figure 2. Number of Laboratory-positive† Influenza Cases and Case Rates by Age Group, Missouri, CDC Week 3 (January 12, 2020 – January 18, 2020)*‡

Age Group	Week 3 Cases	Week 3 Rate‡	2019-2020* Season-to-Date	2019-2020* Season-to-Date Rate‡
00-04	385	02.84	3,479	929.32
05-24	936	58.34	7,621	474.97
25-49	418	21.84	4,844	253.15
50-64	145	11.73	1,756	142.03
65+	86	9.01	1,111	116.34
Total	1,970	32.38	18,811	309.20

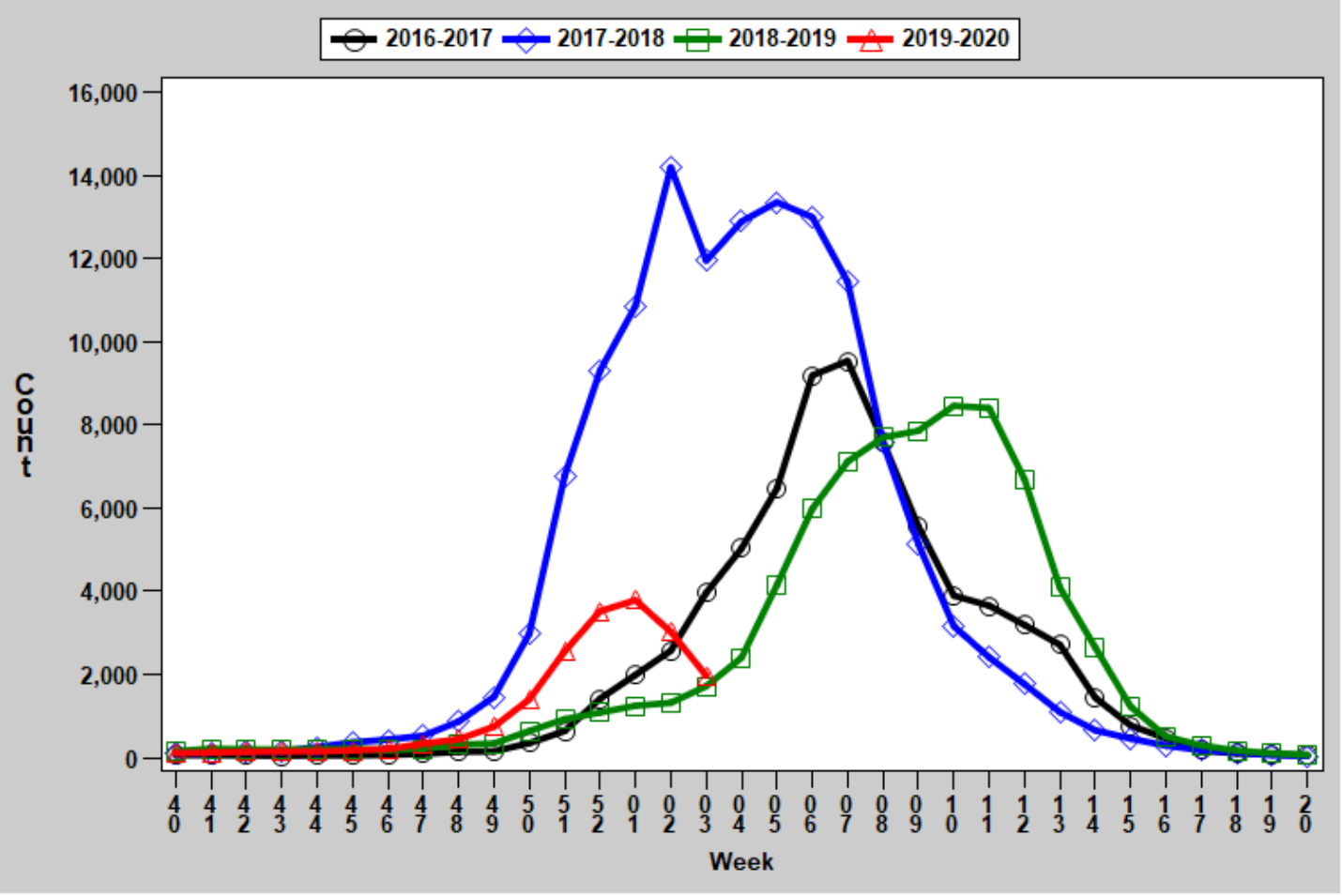
†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
‡Incidence Rate per 100,000 population

Figure 3. Number of Laboratory-positive[†] Influenza Cases and Case Rates by Region, Missouri, CDC Week 3 (January 12, 2020 – January 18, 2020)[*‡]

Region	Week 3 Cases	Week 3 Rate[‡]	2019-2020* Season-to-Date	2019-2020* Season-to-Date Rate[‡]
Central	94	13.88	2,213	326.88
Eastern	628	27.71	3,172	139.97
Northwest	531	33.24	9,473	592.98
Southeast	301	63.81	1,678	355.74
Southwest	416	38.83	2,275	212.36
Total	1,970	32.38	18,811	309.20

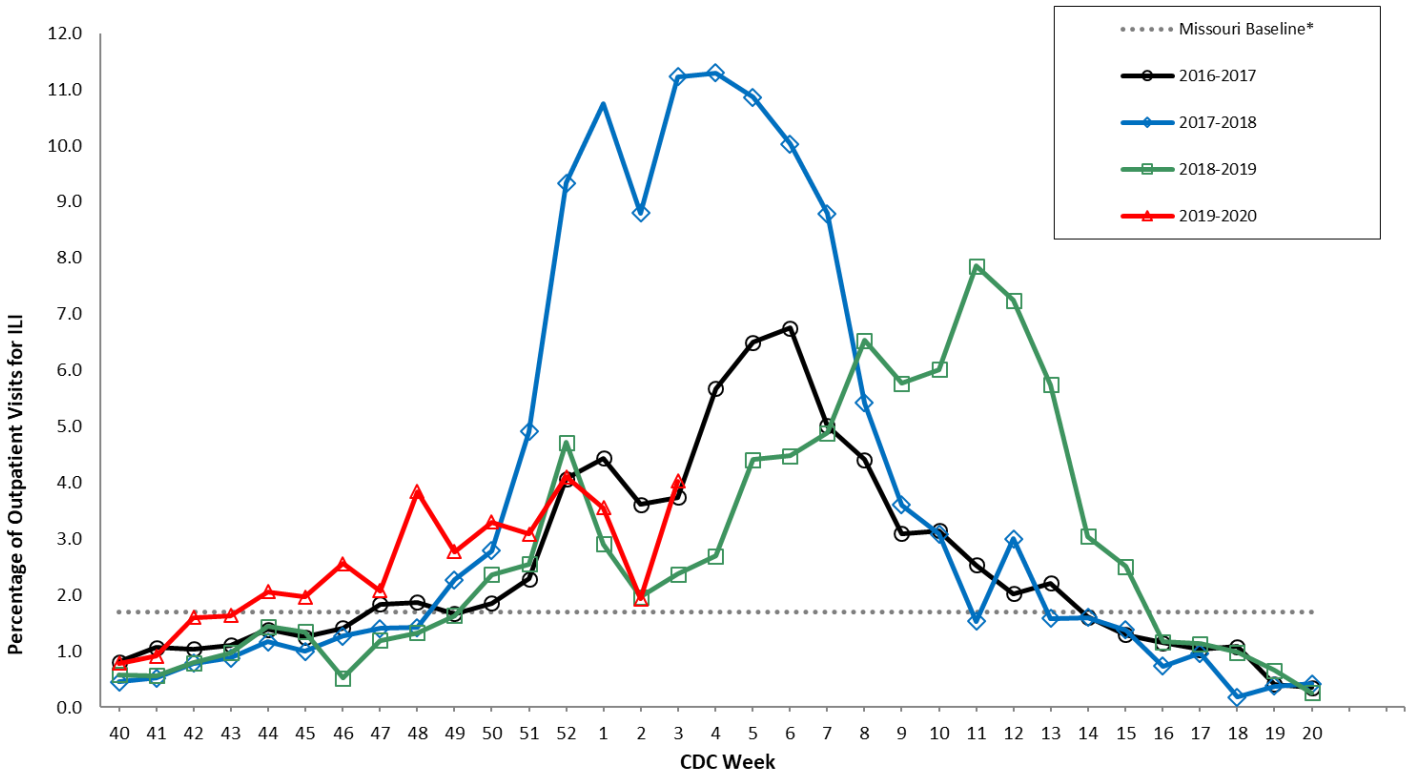
[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
[‡]Incidence Rate per 100,000 population

Figure 4. Number of Laboratory-positive[†] Influenza Cases by CDC Week, Missouri, 2016-2020[*]



[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).Data Source: Missouri Health Information Surveillance System (WebSurv).

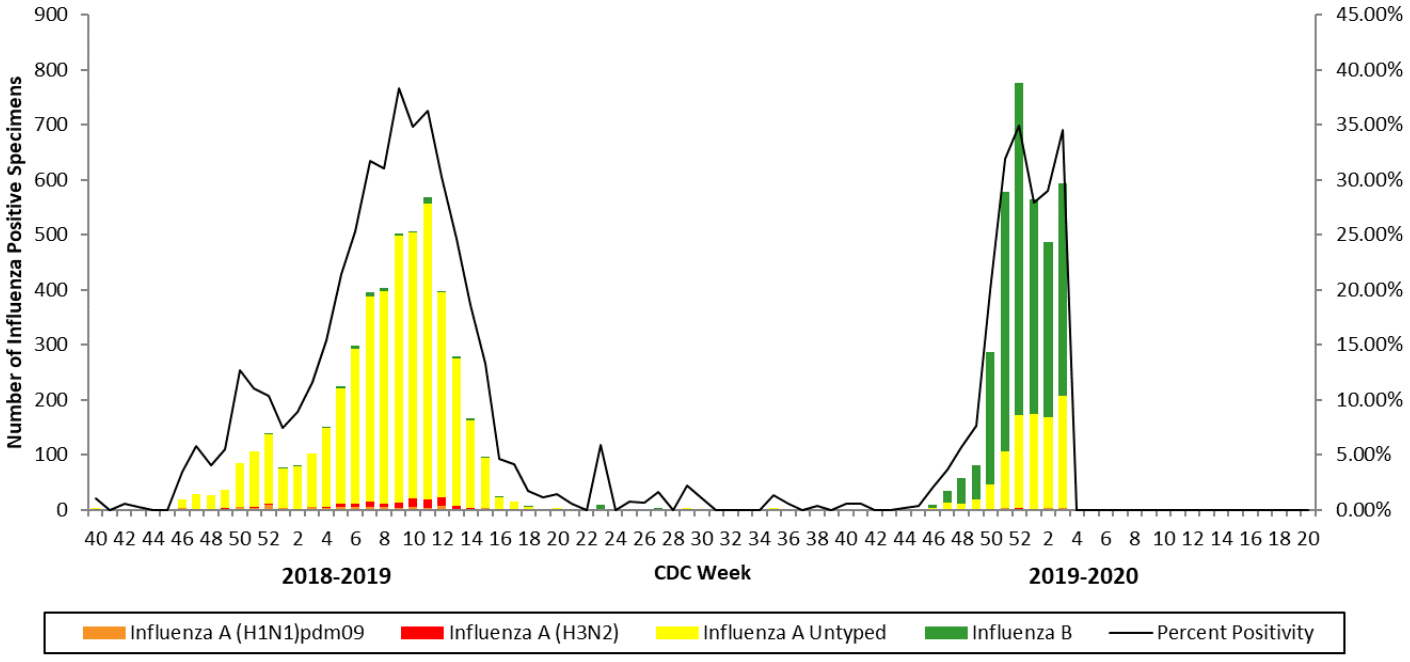
Figure 5. Percentage of Outpatient Visits for Influenza-like Illness (ILI), Missouri Outpatient ILI Surveillance Network (ILINet) 2016-2020*†



*The ILINet Region 7 (MO, IA, KS, NE) baseline is the mean percentage of patient visits for ILI during non-influenza weeks for the previous three seasons, plus two standard deviations. A non-influenza week is defined as periods of two or more consecutive weeks in which each week accounted for less than 2% of the season's total number of specimens that tested positive for influenza. Data Source: U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Centers for Disease Control and Prevention (CDC).

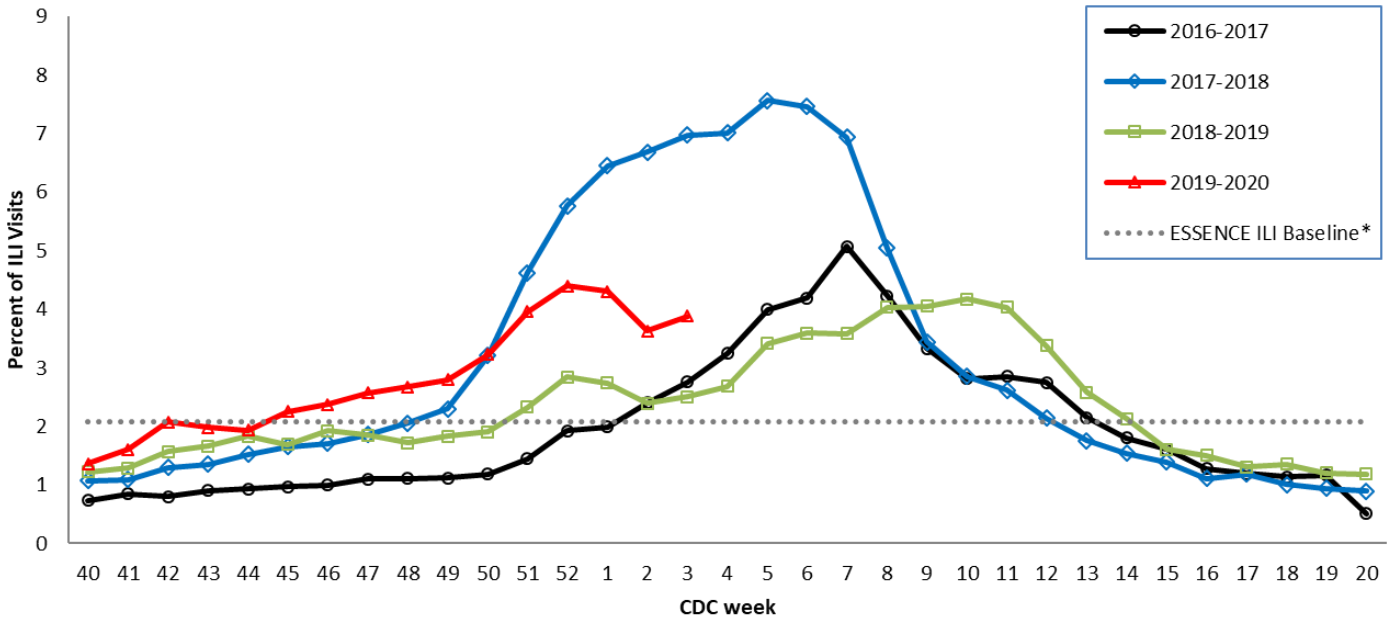
†2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).

Figure 6. Season-to-Date PCR (+) Tests for Influenza in Missouri



Data Source: National Respiratory and Enteric Virus Surveillance System (NREVSS), Centers for Disease Control and Prevention (CDC).
2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).

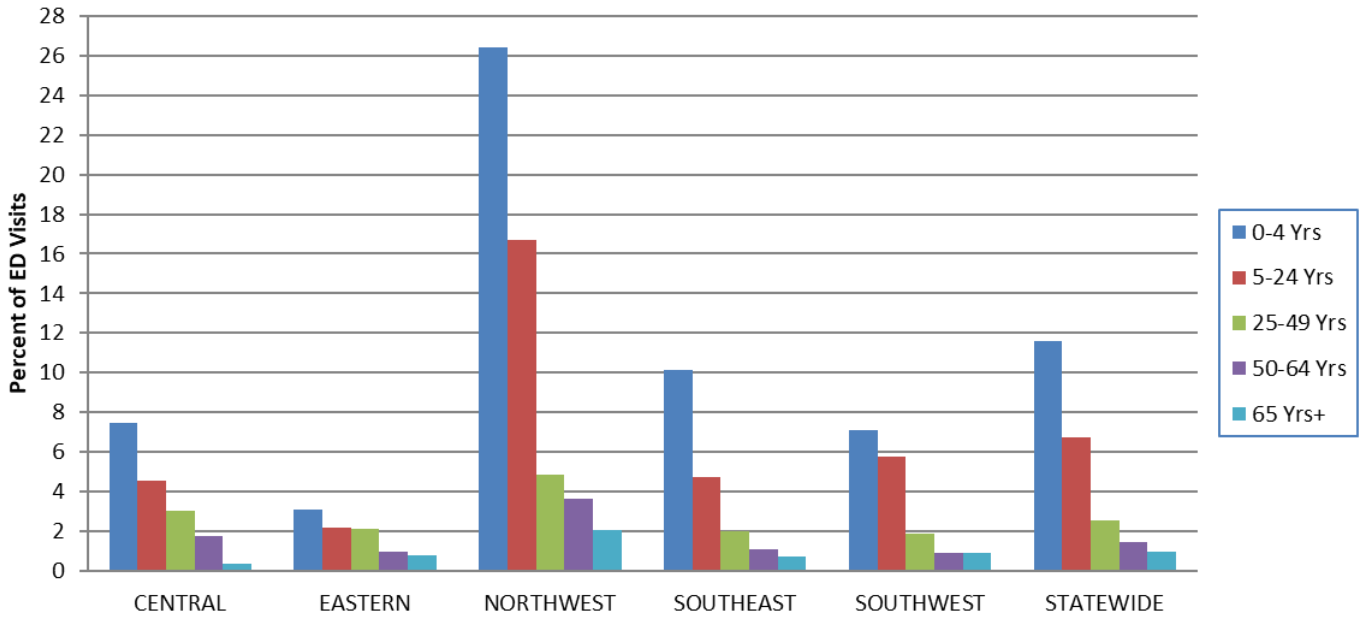
Figure 7. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, 2016-2020 Influenza Seasons*‡



*The ESSENCE ILI Baseline is the mean percent of ILI visits for each week during the previous three years (2016-18) when percentage of ILI visits were less than 2% of total visits, plus two standard deviations. Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.

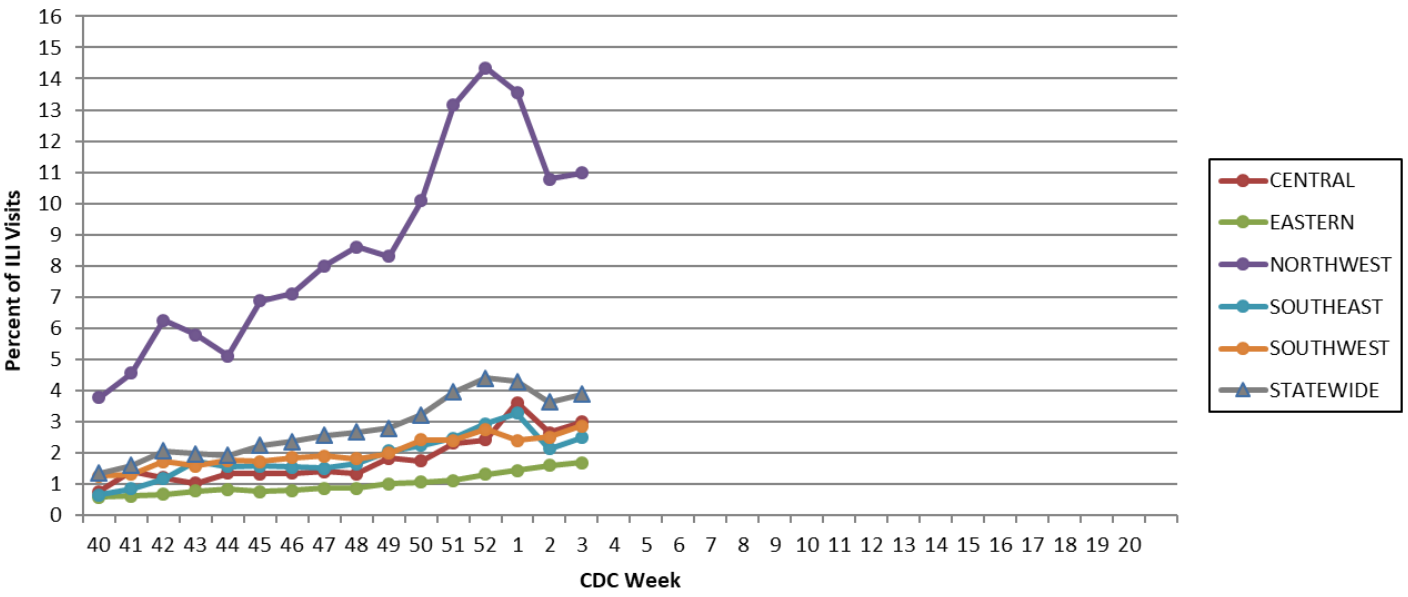
‡The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 8. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Age Group, Region and Statewide, Week 3, 2020*



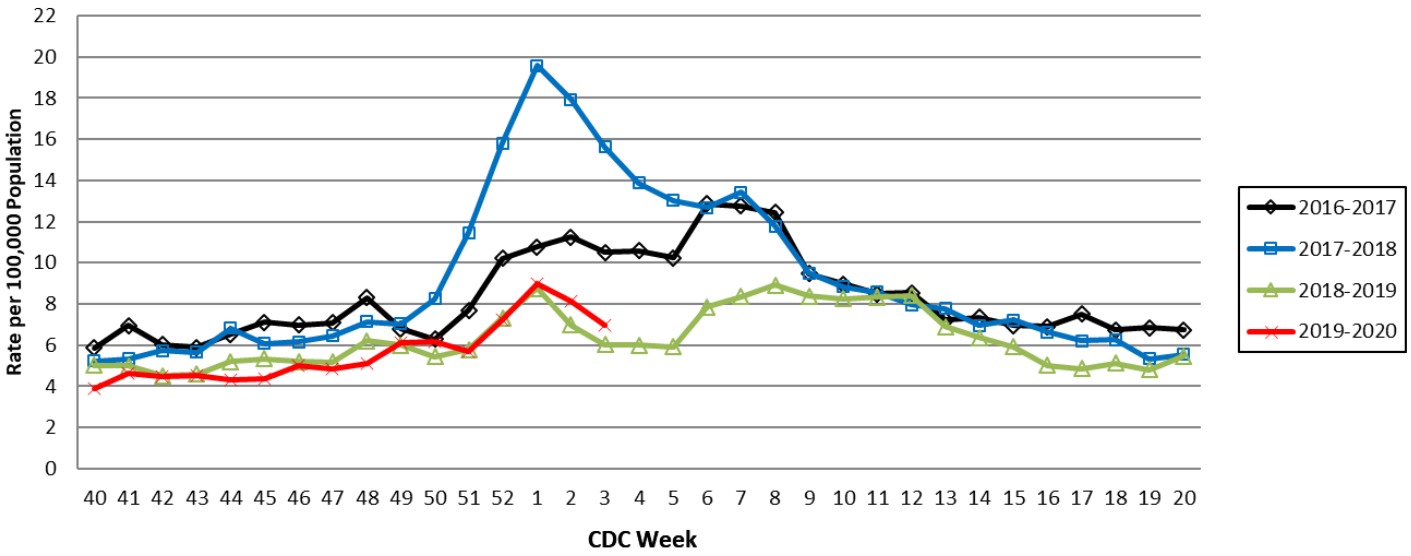
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 9. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Region and Statewide, 2019-2020 Influenza Season*



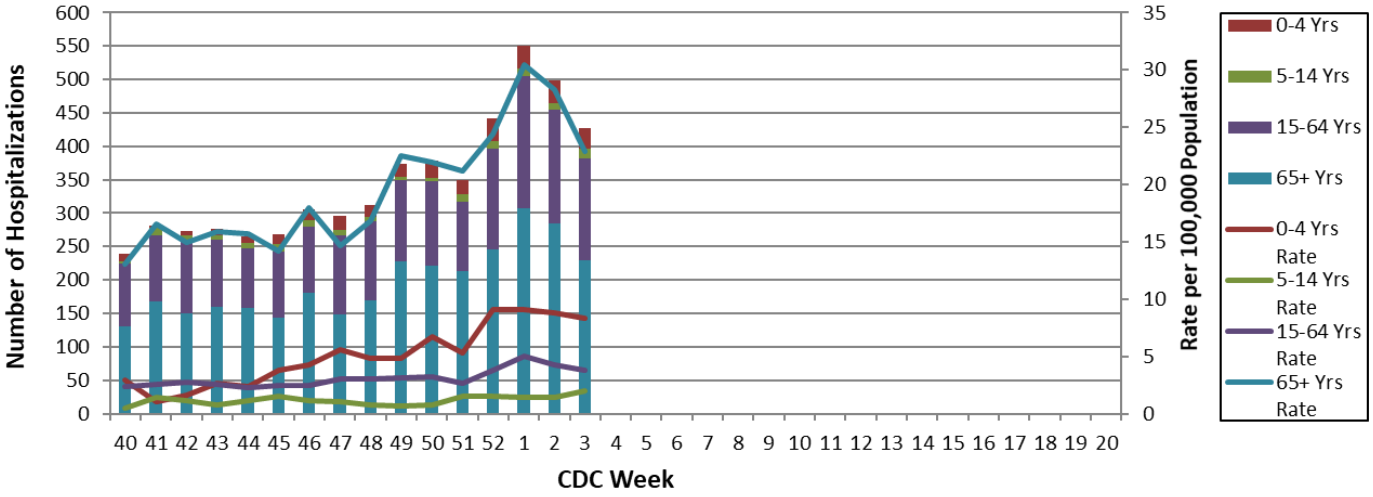
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 10. Weekly Rate of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Missouri Hospitals, 2016-2020 Influenza Seasons



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.
Population data from Missouri Census Data Center 2017 (https://census.missouri.edu).

Figure 11. Number of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Participating Missouri Hospitals, by Age Group, Week 3, 2019-2020 Influenza Season



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.

Additional Influenza Data Sources:

Centers for Disease Control and Prevention: National Influenza Surveillance (FluView):
http://www.cdc.gov/flu/weekly/fluactivitysurv.htm

The National Respiratory and Enteric Virus Surveillance System (NREVSS):
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World Health Organization: International Influenza Surveillance:
http://www.who.int/influenza/surveillance_monitoring/en/

Missouri Weekly Influenza Surveillance Report
2019-2020 Influenza Season[1]

Week 4: January 19, 2020 – January 25, 2020 Revised

All data are preliminary and may change as more reports are received.

Summary:

- The estimated influenza activity in Missouri is Widespread[2].
- A total of 5,086 laboratory-positive[3] influenza cases (1,911 influenza A, 3,143 influenza B, and 32 untyped) were reported during Week 4. The season-to-date total of laboratory-positive influenza cases is 27,072 (36.1% influenza A, 62.8% influenza B, and 1.1% untyped). Five laboratory-positive cases of influenza (3 A H1N1 and 2 B/Victoria) were reported by the Missouri State Public Health Laboratory (MSPHL) during Week 4. The percentage of respiratory specimens testing positive for influenza in Missouri laboratories reporting to the National Respiratory and Enteric Virus Surveillance System (NREVSS) increased during Week 4 (Figure 6).
- Influenza-like illness (ILI) activity was above baseline for the Missouri Outpatient ILI Surveillance Network (ILINet) and for the hospital emergency room visit chief complaint data reported through ESSENCE. The reported percentage of visits for ILI was 6.24% (Figure 5) and 4.04% (Figure 7) through ILINet and ESSENCE respectively.[4] The ILI data from a small number of sites located in the Northwest Region of the state is currently unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.
- A season-to-date total of 16 influenza-associated deaths have been reported in Missouri as of Week 4.[5] During Week 3, 77 deaths involving Pneumonia and Influenza (P&I) were reported to the Bureau of Vital Records, resulting in a season-to-date total of 665 P&I associated deaths in Missouri.[6] *
- No influenza or ILI-associated outbreaks or school closures have been reported in Missouri as of Week 4.
- Seasonal influenza activity in the United States increased slightly during Week 3. National influenza surveillance information is prepared by CDC and is included in the weekly FluView report, which is available online at http://www.cdc.gov/flu/weekly/fluactivitysurv.htm.

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[1]The 2019-2020 influenza season begins CDC Week 40 (week ending October 5, 2019) and ends CDC Week 39 (week ending September 26, 2020).

[2]Widespread is defined as: Outbreaks of influenza or increases in ILI cases and recent laboratory-confirmed influenza in at least half the regions of the state with recent laboratory evidence of influenza in the state.

[3]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.

[4]Influenza-like illness (ILI) is defined by ILINet as fever (temperature of 100ºF [37.8ºC] or greater) and a cough and/or a sore throat without a known cause other than influenza. ILI is defined by ESSENCE as Emergency Department chief complaints for Influenza or (FeverPlus and (Cough or SoreThroat) and not NonILIFevers).

[5]All influenza-associated deaths became reportable in Missouri in 2016. These reports are verified by local public health agencies and DHSS.

[6]The P&I data are obtained from vital statistics data using ICD-10 codes, which are available one week later. The P&I data for the CDC Week provided is the most current data available.

*An issue with the P&I data was identified that resulted in some P&I related deaths not to be reported in prior weeks. This issue has been corrected and all prior Influenza Weekly Reports that were impacted have been amended.

Surveillance Data:

Interactive Maps

The jurisdiction-specific influenza data are provided though interactive maps available at http://bit.ly/moflu19. *Click on the jurisdiction to view the influenza data specific to that jurisdiction.*

- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, CDC Week 4**
- **Reported Week-specific Rate per 100,000 Population, CDC Week 4**
- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, Season-to-Date**
- **Reported Rate per 100,000 Population, Season-to-Date**

Data Figures

Figure 1. Number of Laboratory-positive[†] Influenza Cases by Influenza Type, Missouri, CDC Week 4 (January 19, 2020 – January 25, 2020)[*]

Influenza Type	Week 2	Week 3	Week 4	2019-2020* Season-to-Date
Influenza A	1,417	1,649	1,911	9,764
Influenza B	2,092	2,732	3,143	17,003
Influenza Unknown Or Untyped	58	72	32	305
Total	3,567	4,453	5,086	27,072

[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv).

Figure 2. Number of Laboratory-positive[†] Influenza Cases and Case Rates by Age Group, Missouri, CDC Week 4 (January 19, 2020 – January 25, 2020)[*‡]

Age Group	Week 4 Cases	Week 4 Rate[‡]	2019-2020* Season-to-Date	2019-2020* Season-to-Date Rate[‡]
00-04	884	236.14	4,936	1,318.52
05-24	2,690	167.65	11,675	727.63
25-49	950	49.65	6,598	344.81
50-64	360	29.12	2,392	193.47
65+	202	21.15	1,471	154.04
Total	5,086	83.60	27,072	444.99

[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
[‡]Incidence Rate per 100,000 population

Figure 3. Number of Laboratory-positive[†] Influenza Cases and Case Rates by Region, Missouri, CDC Week 4 (January 19, 2020 – January 25, 2020)[*‡]

Region	Week 4 Cases	Week 4 Rate[‡]	2019-2020* Season-to-Date	2019-2020* Season-to-Date Rate[‡]
Central	262	38.70	2,873	424.37
Eastern	982	43.33	4,549	200.74
Northwest	1,765	110.48	13,026	815.39
Southeast	1,078	228.54	3,067	650.20
Southwest	999	93.25	3,557	332.03
Total	5,086	83.60	27,072	444.99

[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
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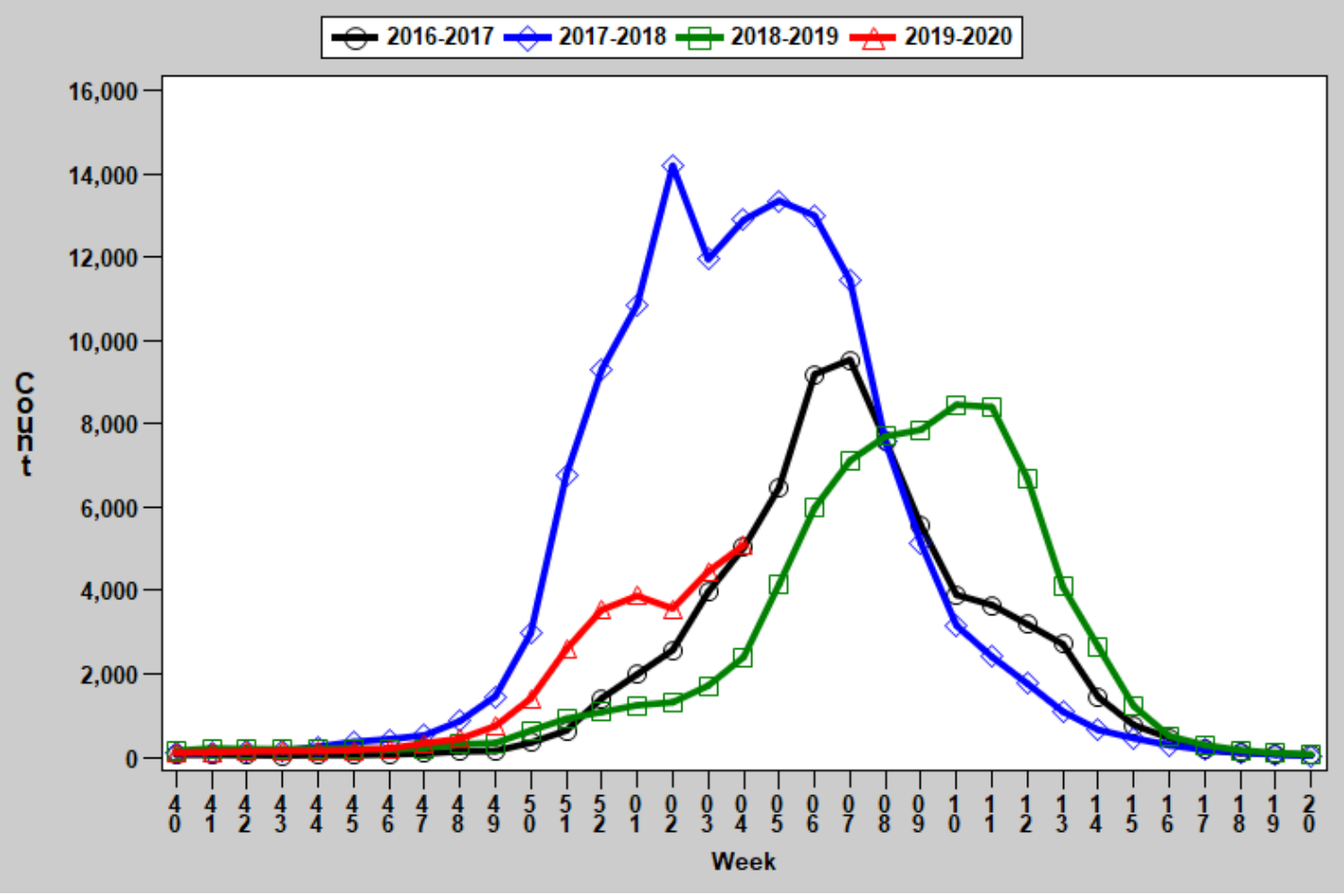
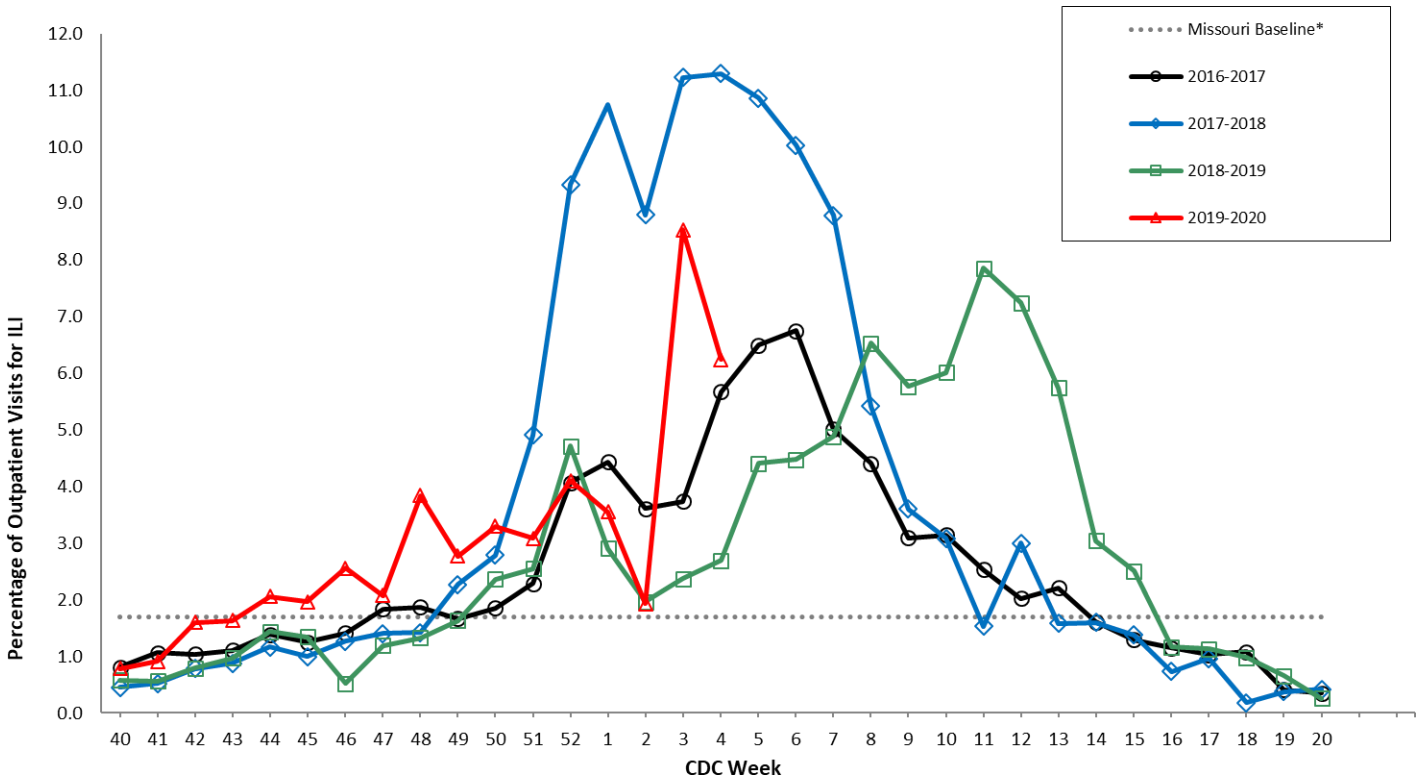
Figure 4. Number of Laboratory-positive[†] Influenza Cases by CDC Week, Missouri, 2016-2020[*]



[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).Data Source: Missouri Health Information Surveillance System (WebSurv).

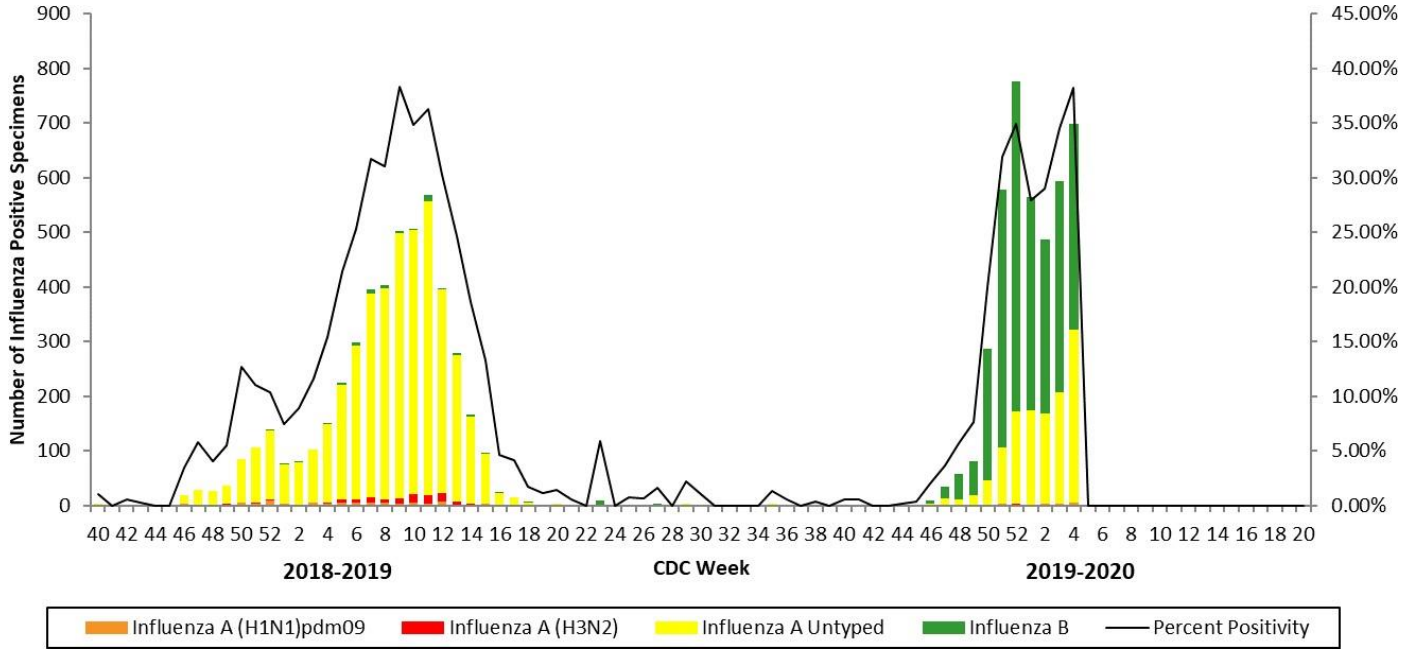
Figure 5. Percentage of Outpatient Visits for Influenza-like Illness (ILI), Missouri Outpatient ILI Surveillance Network (ILINet) 2016-2020*†



*The ILINet Region 7 (MO, IA, KS, NE) baseline is the mean percentage of patient visits for ILI during non-influenza weeks for the previous three seasons, plus two standard deviations. A non-influenza week is defined as periods of two or more consecutive weeks in which each week accounted for less than 2% of the season's total number of specimens that tested positive for influenza. Data Source: U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Centers for Disease Control and Prevention (CDC).

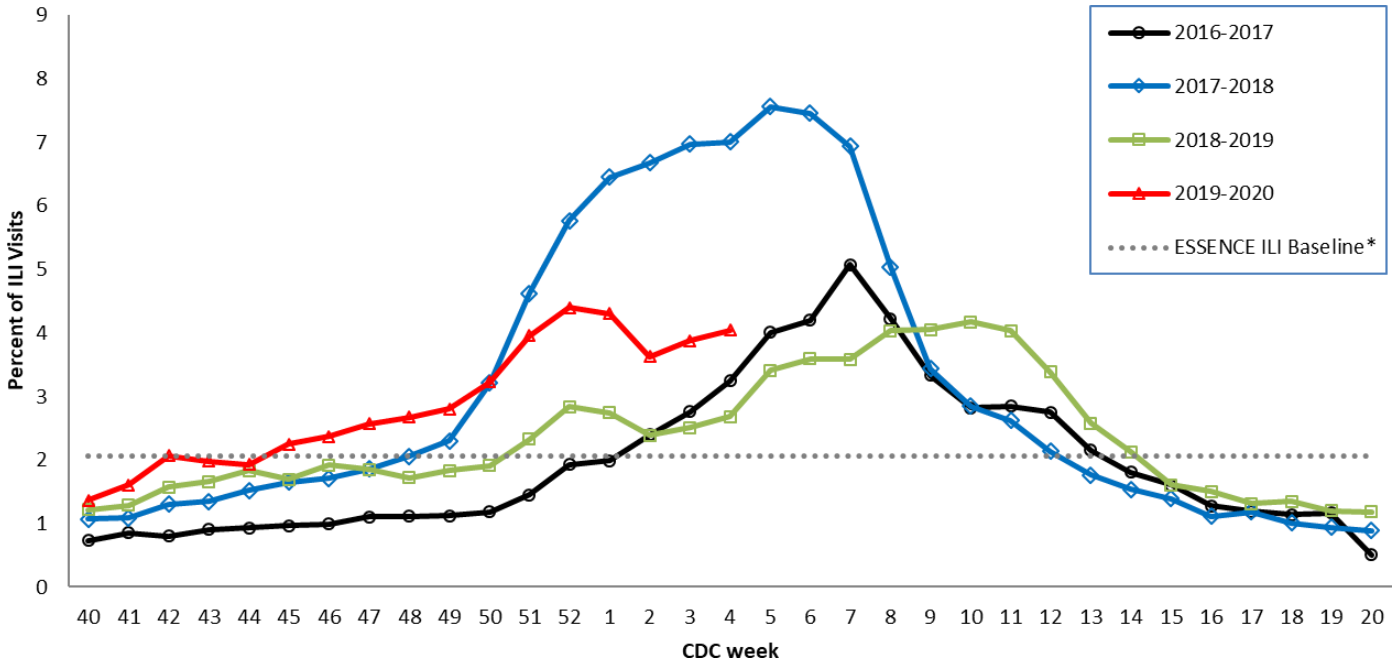
†2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).

Figure 6. Season-to-Date PCR (+) Tests for Influenza in Missouri



Data Source: National Respiratory and Enteric Virus Surveillance System (NREVSS), Centers for Disease Control and Prevention (CDC).
2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).

Figure 7. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, 2016-2020 Influenza Seasons*‡



*The ESSENCE ILI Baseline is the mean percent of ILI visits for each week during the previous three years (2016-18) when percentage of ILI visits were less than 2% of total visits, plus two standard deviations. Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.

‡The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

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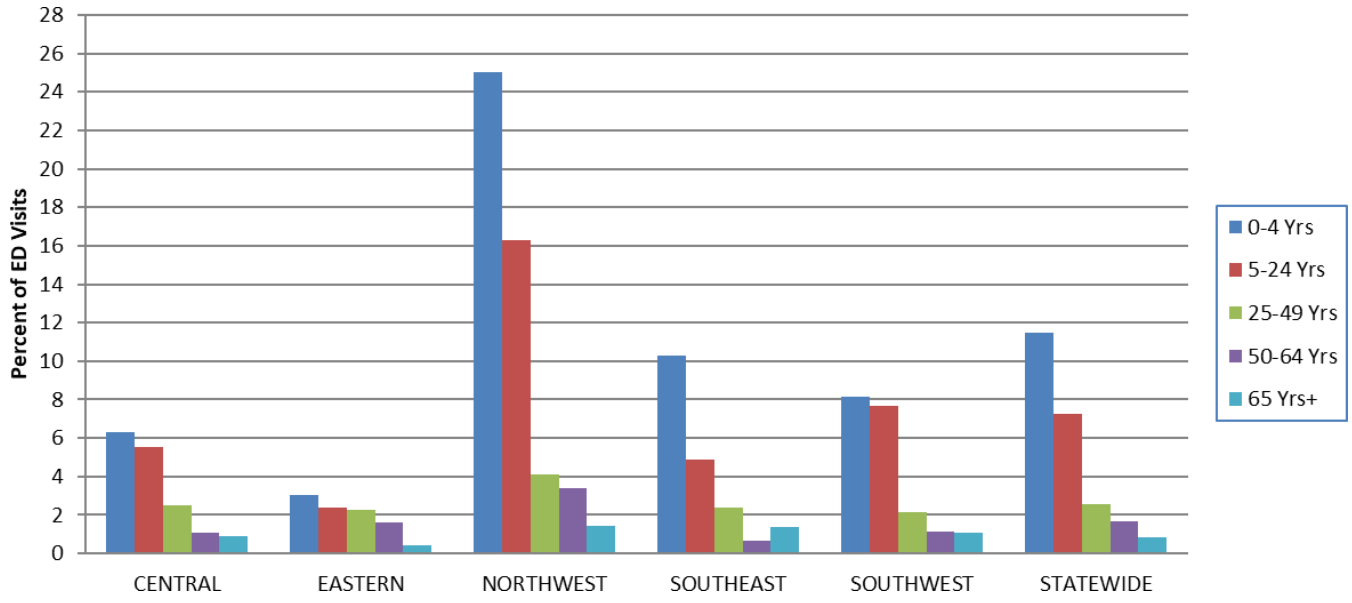

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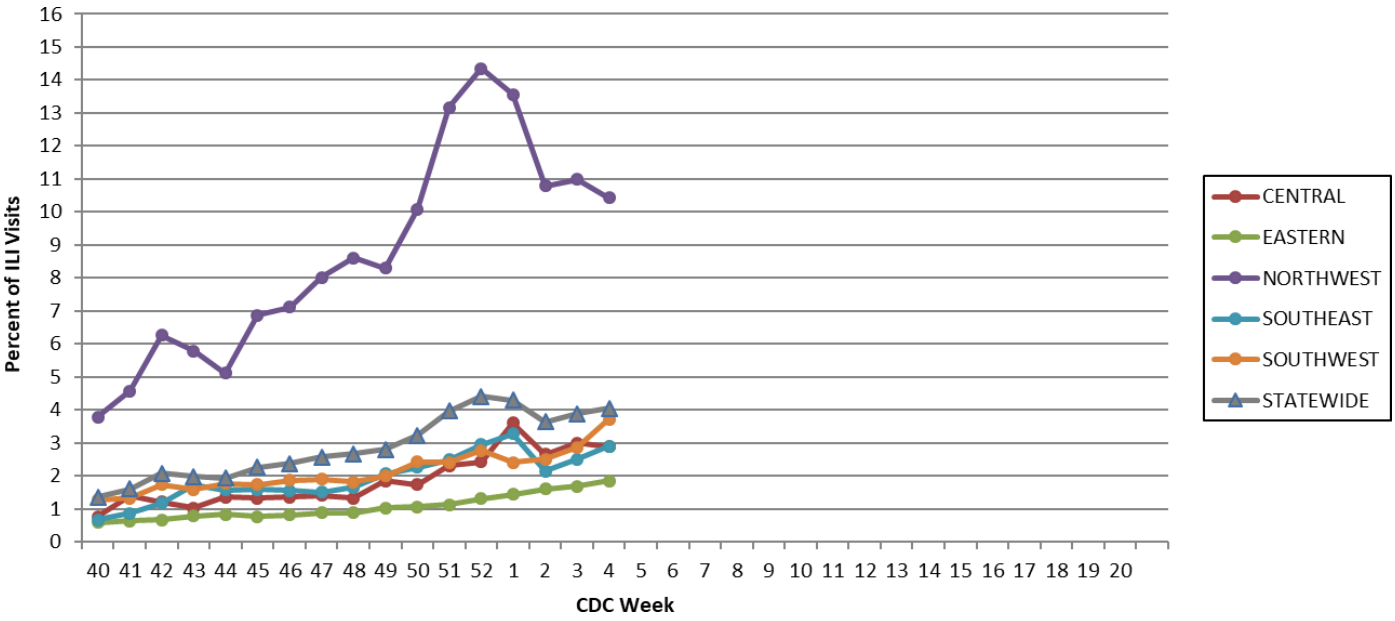

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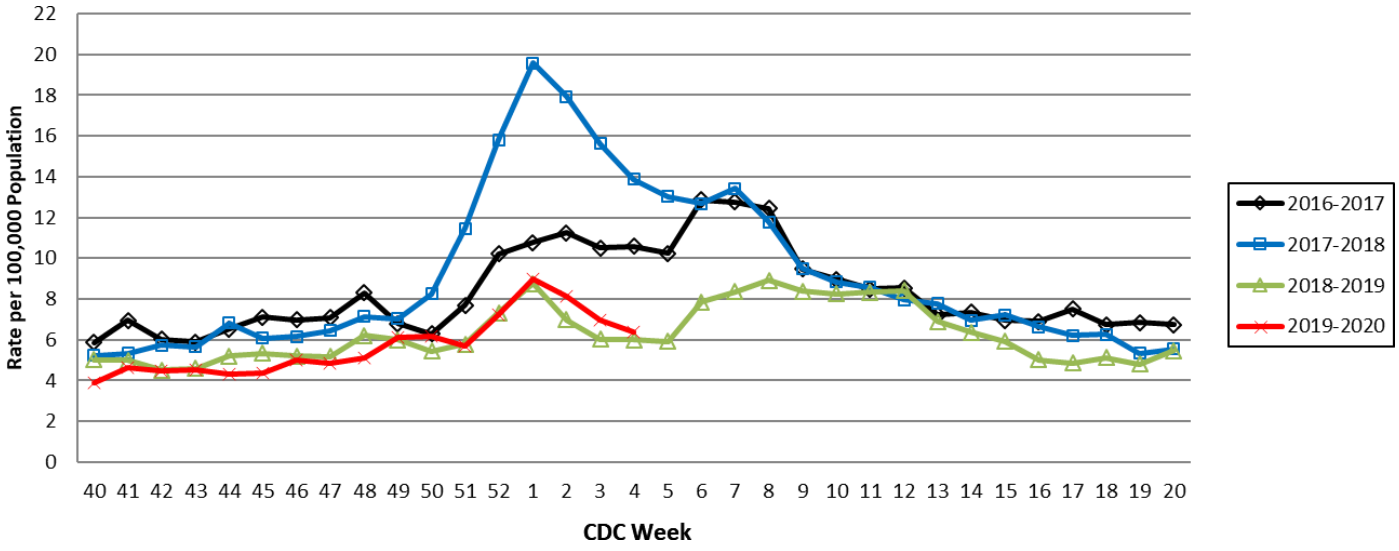
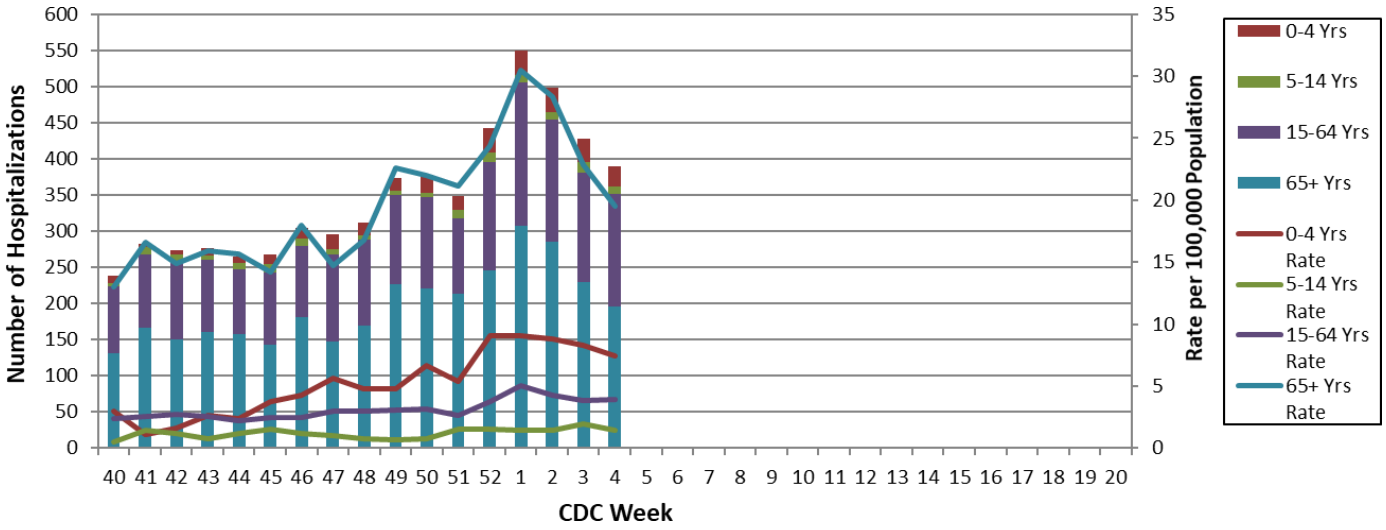
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 10. Weekly Rate of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Missouri Hospitals, 2016-2020 Influenza Seasons



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.
Population data from Missouri Census Data Center 2017 (https://census.missouri.edu).

Figure 11. Number of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Participating Missouri Hospitals, by Age Group, Week 4, 2019-2020 Influenza Season



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.

Additional Influenza Data Sources:

Centers for Disease Control and Prevention: National Influenza Surveillance (FluView):
http://www.cdc.gov/flu/weekly/fluactivitysurv.htm

The National Respiratory and Enteric Virus Surveillance System (NREVSS):
https://www.cdc.gov/surveillance/nrevss/

World Health Organization: International Influenza Surveillance:
http://www.who.int/influenza/surveillance_monitoring/en/

Missouri Weekly Influenza Surveillance Report
2019-2020 Influenza Season[1]

Week 5: January 26, 2020 – February 1, 2020 Revised

All data are preliminary and may change as more reports are received.

Summary:

- The estimated influenza activity in Missouri is Widespread[2].
- A total of 6,995 laboratory-positive[3] influenza cases (3,006 influenza A, 3,927 influenza B, and 62 untyped) were reported during Week 5. The season-to-date total of laboratory-positive influenza cases is 34,635 (38.3% influenza A, 60.6% influenza B, and 1.1% untyped). Ten laboratory-positive cases of influenza (5 A H1N1 and 5 B/Victoria) were reported by the Missouri State Public Health Laboratory (MSPHL) during Week 5. The percentage of respiratory specimens testing positive for influenza in Missouri laboratories reporting to the National Respiratory and Enteric Virus Surveillance System (NREVSS) increased during Week 5 (Figure 6).
- Influenza-like illness (ILI) activity was above baseline for the Missouri Outpatient ILI Surveillance Network (ILINet) and for the hospital emergency room visit chief complaint data reported through ESSENCE. The reported percentage of visits for ILI was 7.23% (Figure 5) and 5.2% (Figure 7) through ILINet and ESSENCE respectively.[4] The ILI data from a small number of sites located in the Northwest Region of the state is currently unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.
- A season-to-date total of 21 influenza-associated deaths have been reported in Missouri as of Week 5.[5] During Week 4, 93 deaths involving Pneumonia and Influenza (P&I) were reported to the Bureau of Vital Records, resulting in a season-to-date total of 758 P&I associated deaths in Missouri.[6] *
- One influenza outbreak and one school closure has been reported in Missouri as of Week 5.
- Seasonal influenza activity in the United States increased during Week 4. National influenza surveillance information is prepared by CDC and is included in the weekly FluView report, which is available online at http://www.cdc.gov/flu/weekly/fluactivitysurv.htm.

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[1]The 2019-2020 influenza season begins CDC Week 40 (week ending October 5, 2019) and ends CDC Week 39 (week ending September 26, 2020).

[2]Widespread is defined as: Outbreaks of influenza or increases in ILI cases and recent laboratory-confirmed influenza in at least half the regions of the state with recent laboratory evidence of influenza in the state.

[3]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.

[4]Influenza-like illness (ILI) is defined by ILINet as fever (temperature of 100ºF [37.8ºC] or greater) and a cough and/or a sore throat without a known cause other than influenza. ILI is defined by ESSENCE as Emergency Department chief complaints for Influenza or (FeverPlus and (Cough or SoreThroat) and not NonILIFevers).

[5]All influenza-associated deaths became reportable in Missouri in 2016. These reports are verified by local public health agencies and DHSS.

[6]The P&I data are obtained from vital statistics data using ICD-10 codes, which are available one week later. The P&I data for the CDC Week provided is the most current data available.

*An issue with the P&I data was identified that resulted in some P&I related deaths not to be reported in prior weeks. This issue has been corrected and all prior Influenza Weekly Reports that were impacted have been amended.

Surveillance Data:

Interactive Maps

The jurisdiction-specific influenza data are provided though interactive maps available at http://bit.ly/moflu19. *Click on the jurisdiction to view the influenza data specific to that jurisdiction.*

- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, CDC Week 5**
- **Reported Week-specific Rate per 100,000 Population, CDC Week 5**
- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, Season-to-Date**
- **Reported Rate per 100,000 Population, Season-to-Date**

Data Figures

Figure 1. Number of Laboratory-positive† Influenza Cases by Influenza Type, Missouri, CDC Week 5 (January 26, 2020 – February 1, 2020)*

Influenza Type	Week 3	Week 4	Week 5	2019-2020* Season-to-Date
Influenza A	1,683	2,363	3,006	13,271
Influenza B	2,539	3,416	3,927	20,987
Influenza Unknown Or Untyped	72	42	62	377
Total	4,294	5,821	6,995	34,635

†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv).

Figure 2. Number of Laboratory-positive† Influenza Cases and Case Rates by Age Group, Missouri, CDC Week 5 (January 26, 2020 – February 1, 2020)*‡

Age Group	Week 5 Cases	Week 5 Rate‡	2019-2020* Season-to-Date	2019-2020* Season-to-Date Rate‡
00-04	1,224	326.96	6,342	1,694.09
05-24	3,370	210.03	14,956	932.12
25-49	1,513	79.07	8,414	439.72
50-64	592	47.88	3,103	250.98
65+	296	31.00	1,820	190.59
Total	6,995	114.98	34,635	569.31

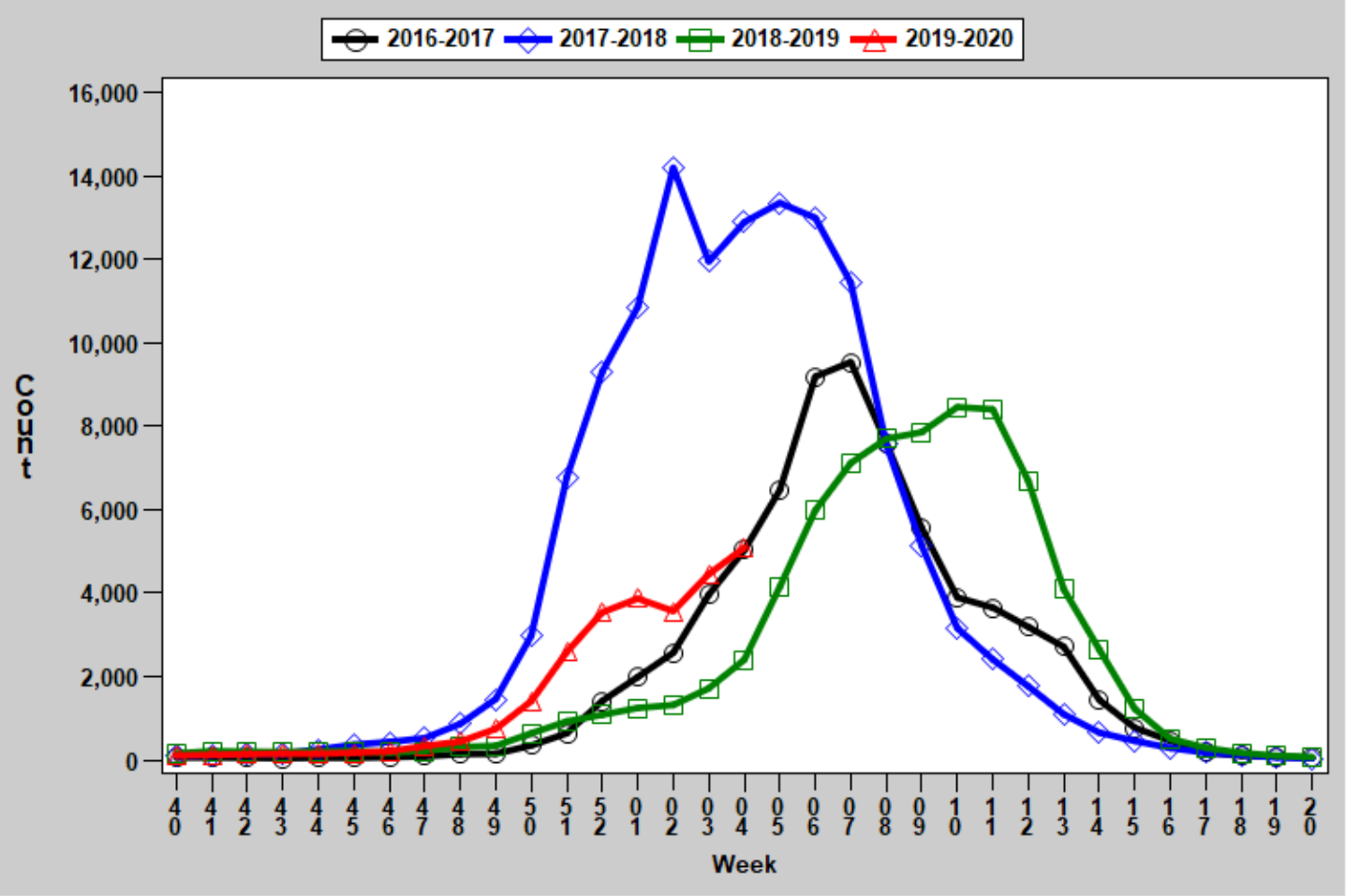
†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
‡Incidence Rate per 100,000 population

Figure 3. Number of Laboratory-positive[†] Influenza Cases and Case Rates by Region, Missouri, CDC Week 5 (January 26, 2020 – February 1, 2020)[*‡]

Region	Week 5 Cases	Week 5 Rate[‡]	2019-2020* Season-to-Date	2019-2020* Season-to-Date Rate[‡]
Central	378	55.83	3,572	527.62
Eastern	1,500	66.19	6,285	277.34
Northwest	2,348	146.98	15,893	994.85
Southeast	778	164.94	3,032	642.78
Southwest	1,991	185.85	5,853	546.35
Total	6,995	114.98	34,635	569.31

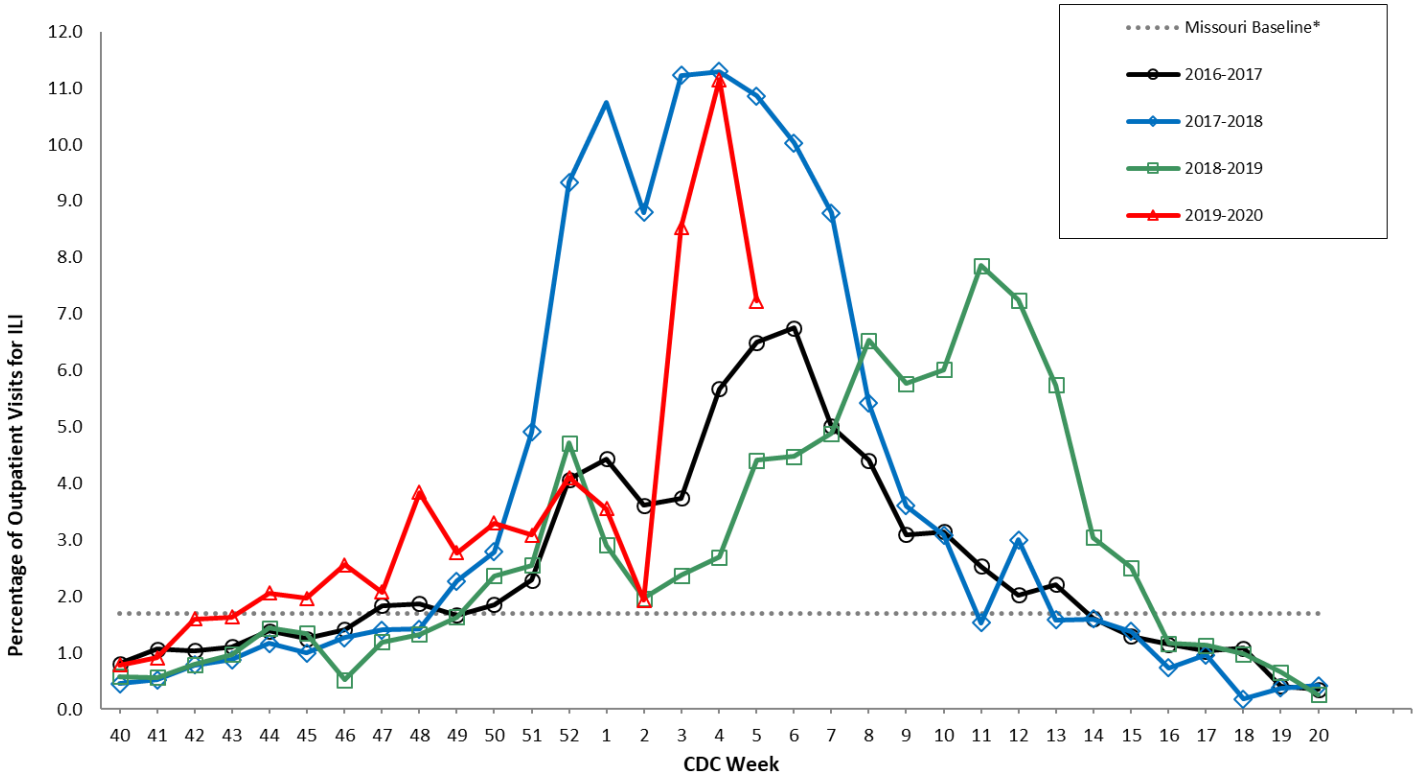
[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
[‡]Incidence Rate per 100,000 population

Figure 4. Number of Laboratory-positive[†] Influenza Cases by CDC Week, Missouri, 2016-2020[*]



[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).Data Source: Missouri Health Information Surveillance System (WebSurv).

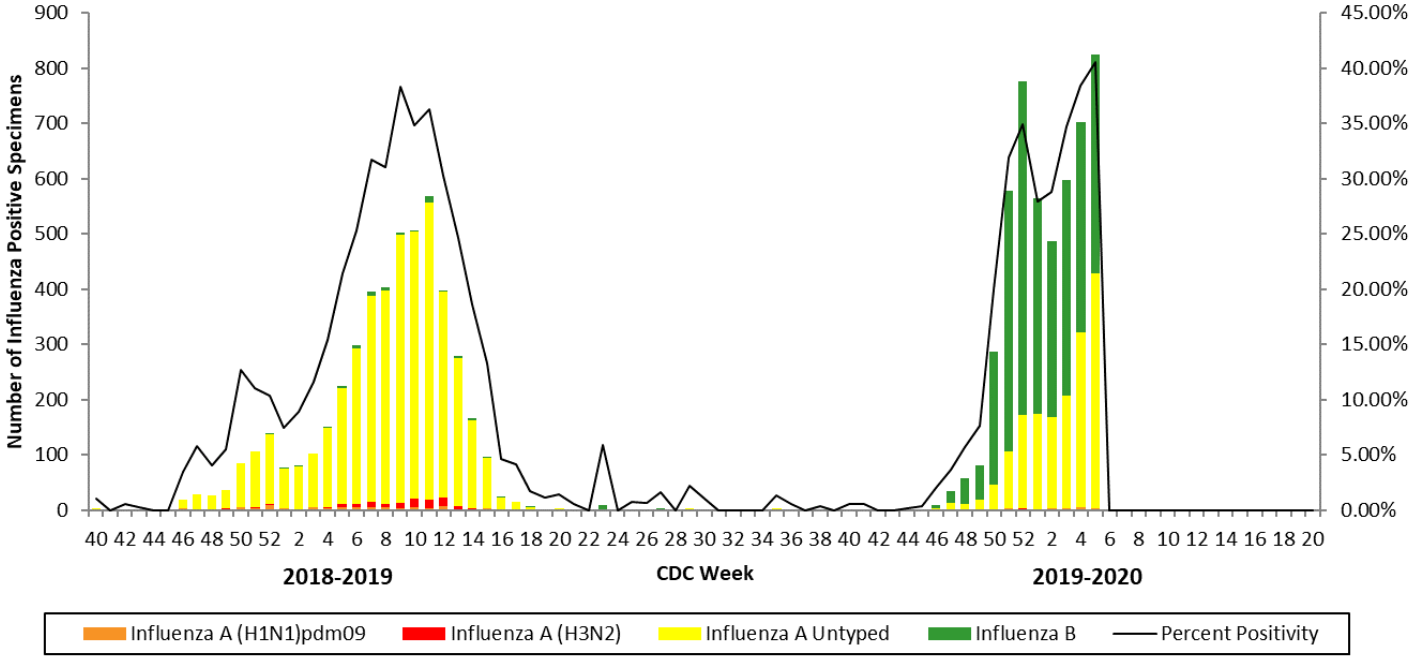
Figure 5. Percentage of Outpatient Visits for Influenza-like Illness (ILI), Missouri Outpatient ILI Surveillance Network (ILINet) 2016-2020*†



*The ILINet Region 7 (MO, IA, KS, NE) baseline is the mean percentage of patient visits for ILI during non-influenza weeks for the previous three seasons, plus two standard deviations. A non-influenza week is defined as periods of two or more consecutive weeks in which each week accounted for less than 2% of the season's total number of specimens that tested positive for influenza. Data Source: U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Centers for Disease Control and Prevention (CDC).

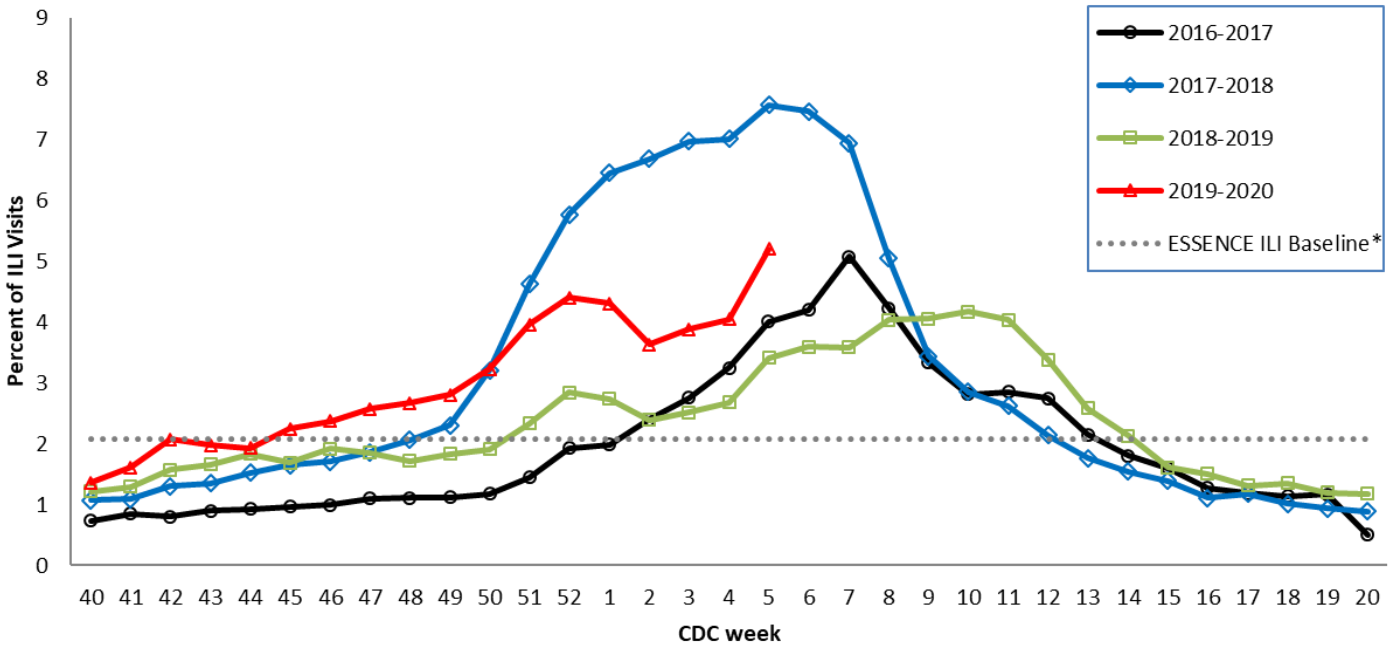
†2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).

Figure 6. Season-to-Date PCR (+) Tests for Influenza in Missouri



Data Source: National Respiratory and Enteric Virus Surveillance System (NREVSS), Centers for Disease Control and Prevention (CDC).
2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).

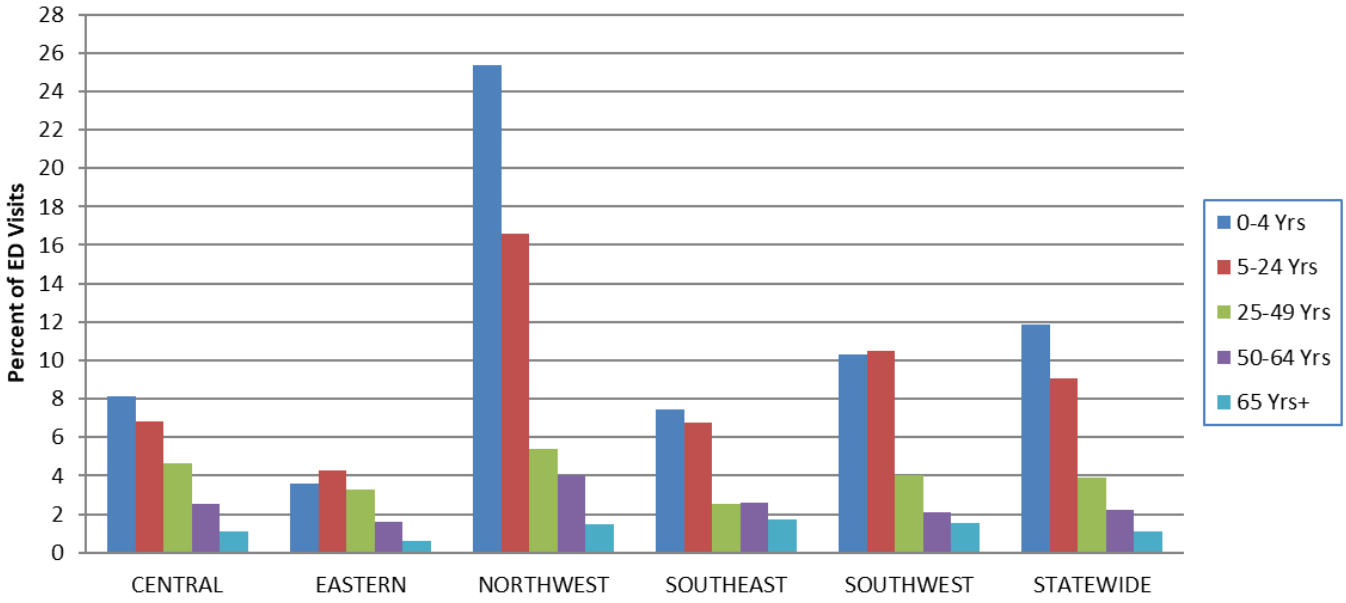
Figure 7. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, 2016-2020 Influenza Seasons*‡



*The ESSENCE ILI Baseline is the mean percent of ILI visits for each week during the previous three years (2016-18) when percentage of ILI visits were less than 2% of total visits, plus two standard deviations. Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.

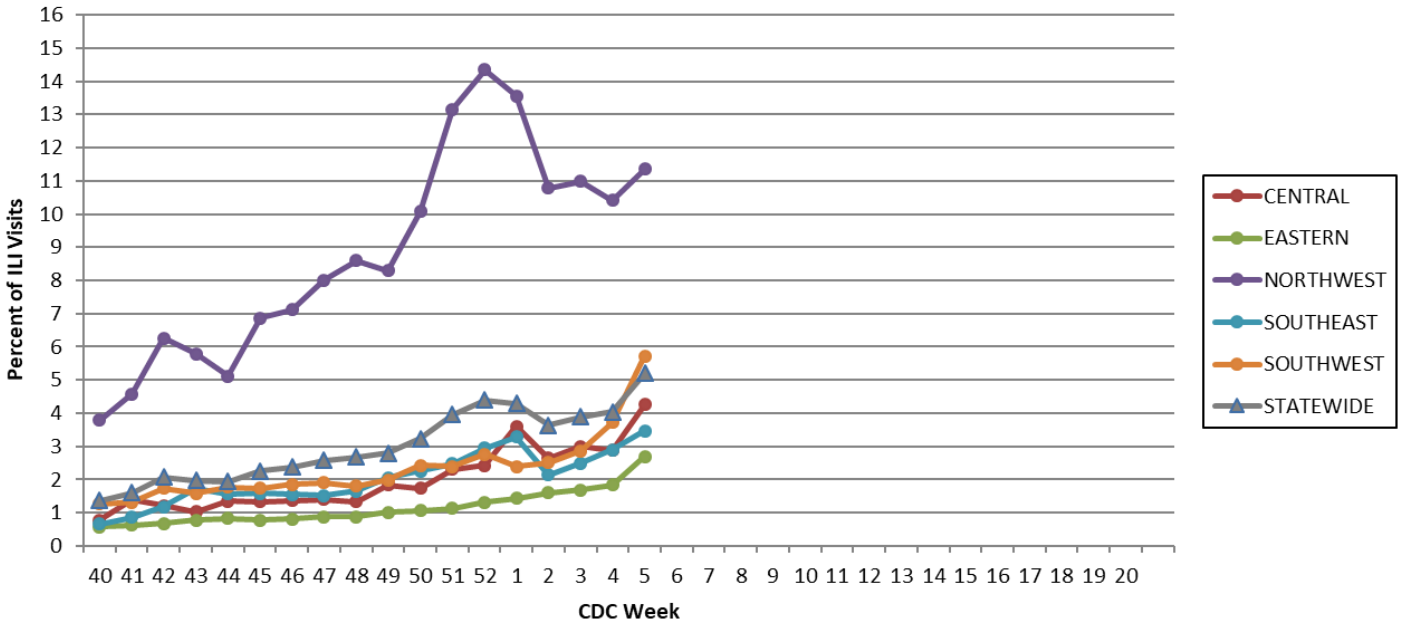
‡The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 8. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Age Group, Region and Statewide, Week 5, 2020*



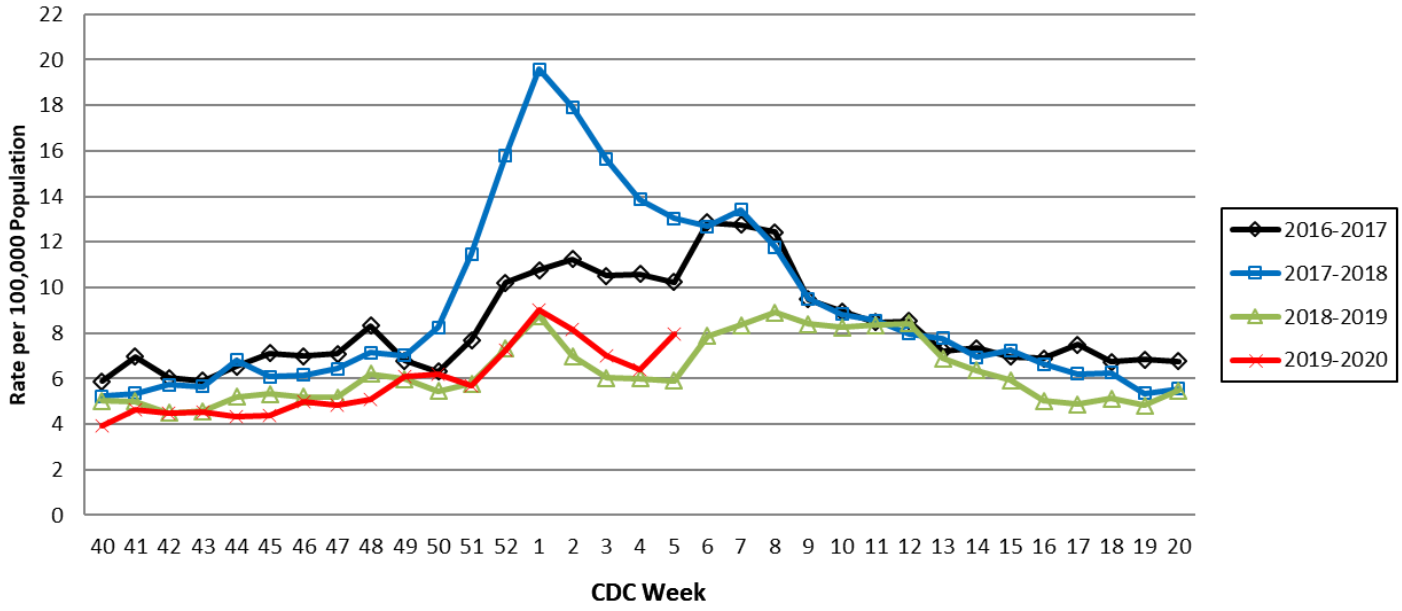
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 9. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Region and Statewide, 2019-2020 Influenza Season*



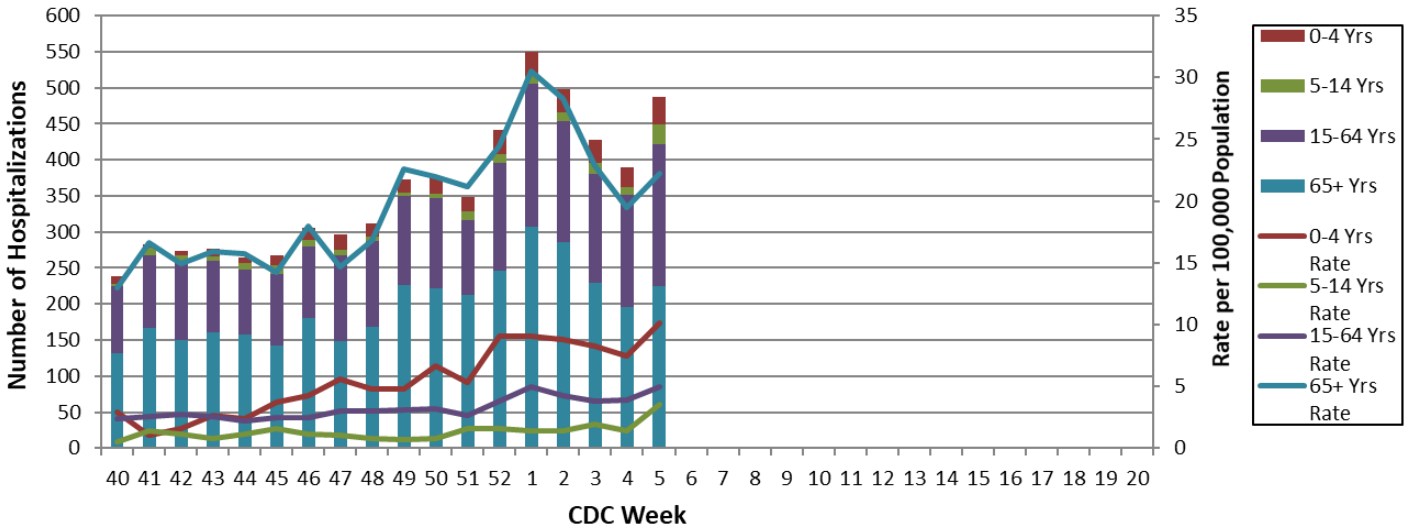
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 10. Weekly Rate of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Missouri Hospitals, 2016-2020 Influenza Seasons



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.
Population data from Missouri Census Data Center 2017 (https://census.missouri.edu).

Figure 11. Number of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Participating Missouri Hospitals, by Age Group, Week 5, 2019-2020 Influenza Season



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.

Additional Influenza Data Sources:

Centers for Disease Control and Prevention: National Influenza Surveillance (FluView):
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Missouri Weekly Influenza Surveillance Report
2019-2020 Influenza Season[1]

Week 6: February 2, 2020 – February 8, 2020 Revised

All data are preliminary and may change as more reports are received.

Summary:

- The estimated influenza activity in Missouri is Widespread[2].
- A total of 8,498 laboratory-positive[3] influenza cases (3,703 influenza A, 4,741 influenza B, and 54 untyped) were reported during Week 6. The season-to-date total of laboratory-positive influenza cases is 44,922 (39.3% influenza A, 59.7% influenza B, and 1% untyped). Eight laboratory-positive cases of influenza (3 A H1N1 and 5 B/Victoria) were reported by the Missouri State Public Health Laboratory (MSPHL) during Week 6. The percentage of respiratory specimens testing positive for influenza in Missouri laboratories reporting to the National Respiratory and Enteric Virus Surveillance System (NREVSS) increased during Week 6 (Figure 6).
- Influenza-like illness (ILI) activity was above baseline for the Missouri Outpatient ILI Surveillance Network (ILINet) and for the hospital emergency room visit chief complaint data reported through ESSENCE. The reported percentage of visits for ILI was 8.21% (Figure 5) and 5.94% (Figure 7) through ILINet and ESSENCE respectively.[4] The ILI data from a small number of sites located in the Northwest Region of the state is currently unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.
- A season-to-date total of 27 influenza-associated deaths have been reported in Missouri as of Week 6.[5] During Week 5, 72 deaths involving Pneumonia and Influenza (P&I) were reported to the Bureau of Vital Records, resulting in a season-to-date total of 830 P&I associated deaths in Missouri.[6] *
- One influenza outbreak and four school closure have been reported in Missouri as of Week 6.
- Seasonal influenza activity in the United States remained high during Week 5. National influenza surveillance information is prepared by CDC and is included in the weekly FluView report, which is available online at http://www.cdc.gov/flu/weekly/fluactivitysurv.htm.

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[1]The 2019-2020 influenza season begins CDC Week 40 (week ending October 5, 2019) and ends CDC Week 39 (week ending September 26, 2020).

[2]Widespread is defined as: Outbreaks of influenza or increases in ILI cases and recent laboratory-confirmed influenza in at least half the regions of the state with recent laboratory evidence of influenza in the state.

[3]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.

[4]Influenza-like illness (ILI) is defined by ILINet as fever (temperature of 100ºF [37.8ºC] or greater) and a cough and/or a sore throat without a known cause other than influenza. ILI is defined by ESSENCE as Emergency Department chief complaints for Influenza or (FeverPlus and (Cough or SoreThroat) and not NonILIFevers).

[5]All influenza-associated deaths became reportable in Missouri in 2016. These reports are verified by local public health agencies and DHSS.

[6]The P&I data are obtained from vital statistics data using ICD-10 codes, which are available one week later. The P&I data for the CDC Week provided is the most current data available.

*An issue with the P&I data was identified that resulted in some P&I related deaths not to be reported in prior weeks. This issue has been corrected and all prior Influenza Weekly Reports that were impacted have been amended.

Surveillance Data:

Interactive Maps

The jurisdiction-specific influenza data are provided though interactive maps available at http://bit.ly/moflu19. *Click on the jurisdiction to view the influenza data specific to that jurisdiction.*

- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, CDC Week 6**
- **Reported Week-specific Rate per 100,000 Population, CDC Week 6**
- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, Season-to-Date**
- **Reported Rate per 100,000 Population, Season-to-Date**

Data Figures

Figure 1. Number of Laboratory-positive† Influenza Cases by Influenza Type, Missouri, CDC Week 6 (February 2, 2020 – February 8, 2020)*

Influenza Type	Week 4	Week 5	Week 6	2019-2020* Season-to-Date
Influenza A	2,395	3,643	3,703	17,657
Influenza B	3,489	4,898	4,741	26,808
Influenza Unknown Or Untyped	43	87	54	457
Total	5,927	8,628	8,498	44,922

†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv).

Figure 2. Number of Laboratory-positive† Influenza Cases and Case Rates by Age Group, Missouri, CDC Week 6 (February 2, 2020 – February 8, 2020)*‡

Age Group	Week 6 Cases	Week 6 Rate‡	2019-2020* Season-to-Date	2019-2020* Season-to-Date Rate‡
00-04	1,428	381.45	8,077	2,157.55
05-24	4,233	263.82	20,136	1,254.96
25-49	1,831	95.69	10,601	554.01
50-64	646	52.25	3,873	313.25
65+	360	37.70	2,235	234.05
Total	8,498	139.69	44,922	738.40

†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
‡Incidence Rate per 100,000 population

Figure 3. Number of Laboratory-positive[†] Influenza Cases and Case Rates by Region, Missouri, CDC Week 6 (February 2, 2020 – February 8, 2020)[*‡]

Region	Week 6 Cases	Week 6 Rate[‡]	2019-2020* Season-to-Date	2019-2020* Season-to-Date Rate[‡]
Central	1,221	180.36	5,477	809.01
Eastern	1,986	87.64	8,380	369.79
Northwest	1,940	121.44	18,295	1,145.21
Southeast	1,161	246.13	4,358	923.89
Southwest	2,190	204.42	8,412	785.21
Total	8,498	139.69	44,922	738.40

[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
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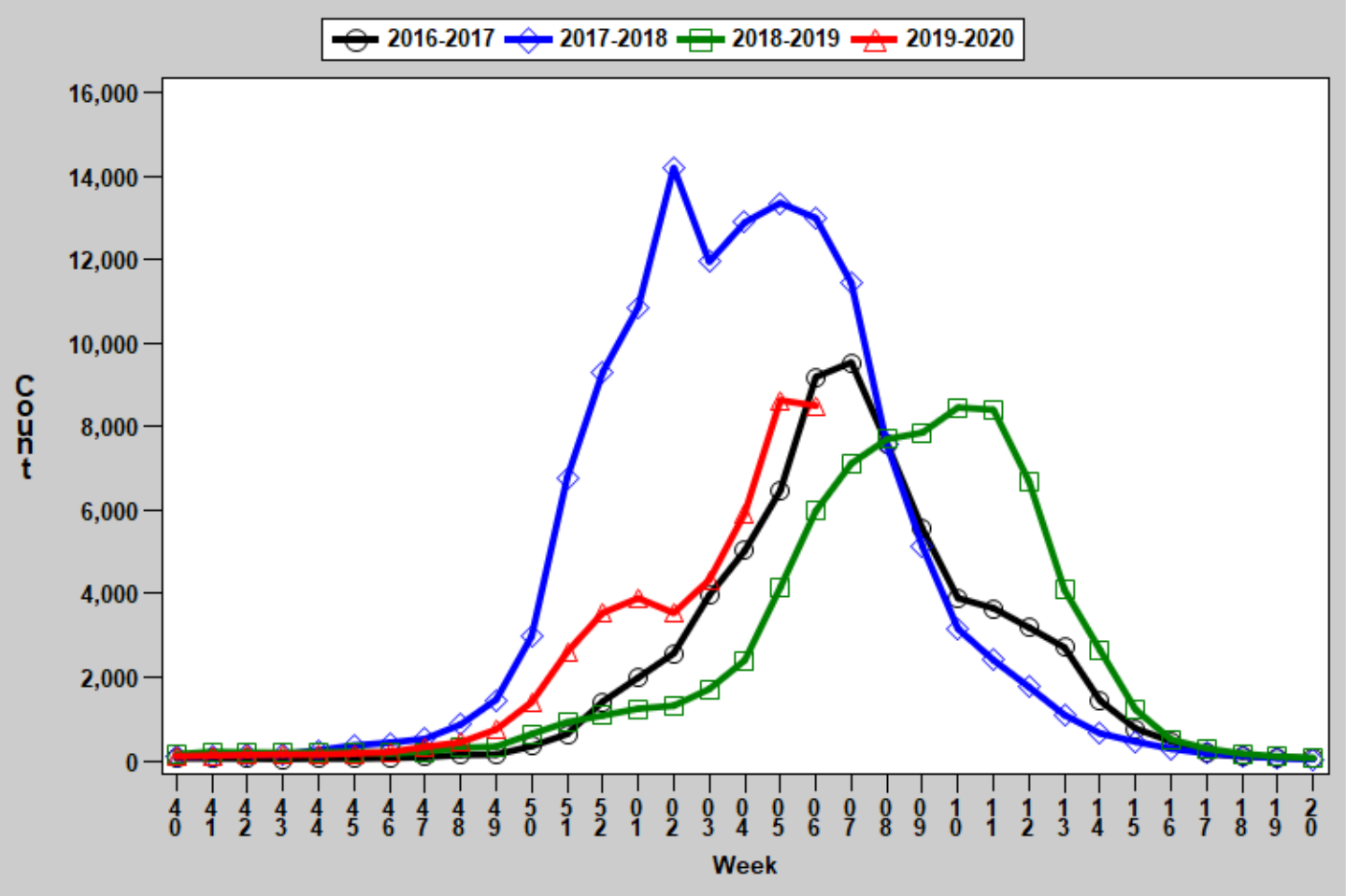
[‡]Incidence Rate per 100,000 population

Figure 4. Number of Laboratory-positive[†] Influenza Cases by CDC Week, Missouri, 2016-2020[*]



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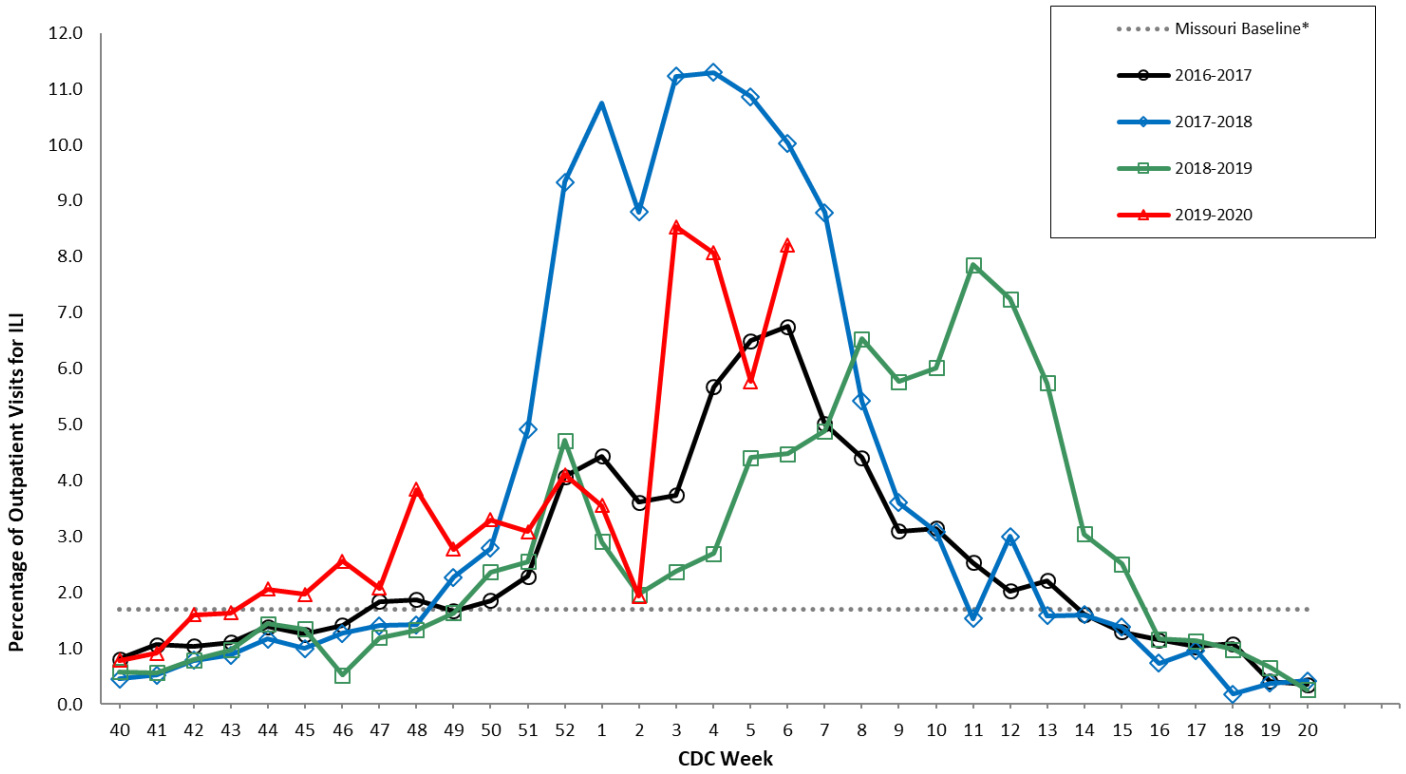
[*]2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).Data Source: Missouri Health Information Surveillance System (WebSurv).

Figure 5. Percentage of Outpatient Visits for Influenza-like Illness (ILI), Missouri Outpatient ILI Surveillance Network (ILINet) 2016-2020*†



*The ILINet Region 7 (MO, IA, KS, NE) baseline is the mean percentage of patient visits for ILI during non-influenza weeks for the previous three seasons, plus two standard deviations. A non-influenza week is defined as periods of two or more consecutive weeks in which each week accounted for less than 2% of the season's total number of specimens that tested positive for influenza. Data Source: U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Centers for Disease Control and Prevention (CDC).

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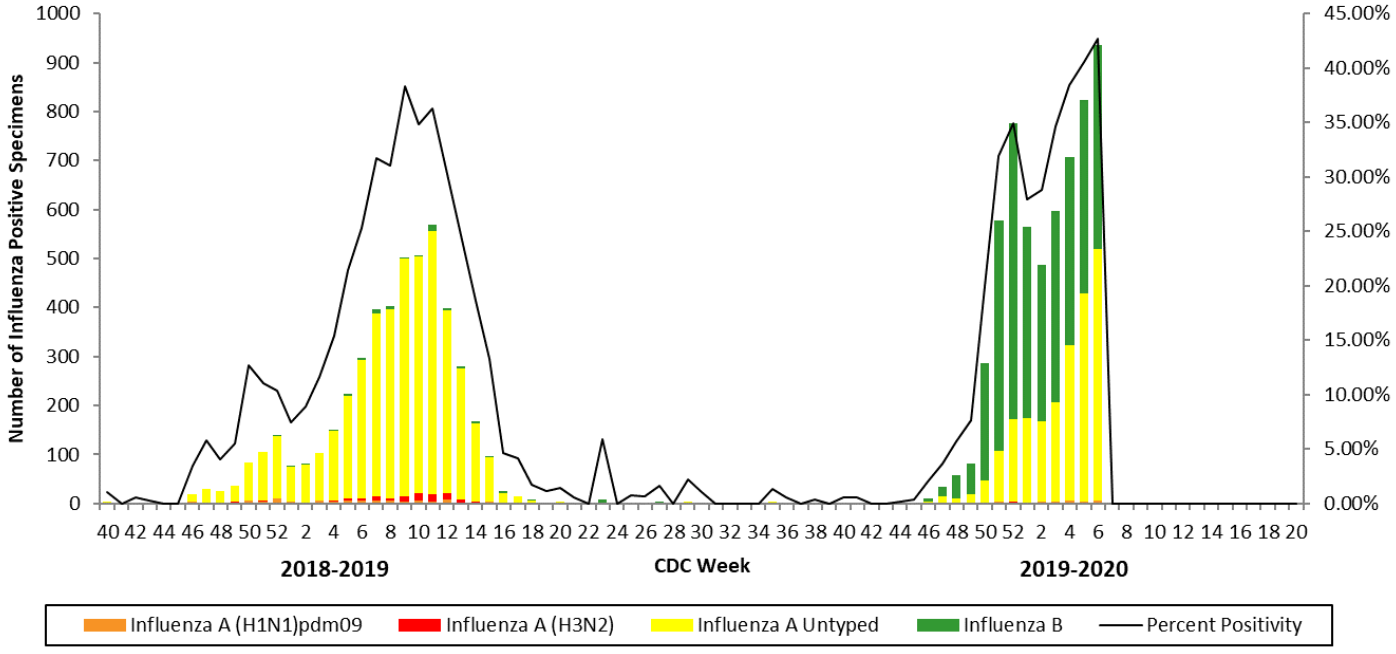
Figure 6. Season-to-Date PCR (+) Tests for Influenza in Missouri



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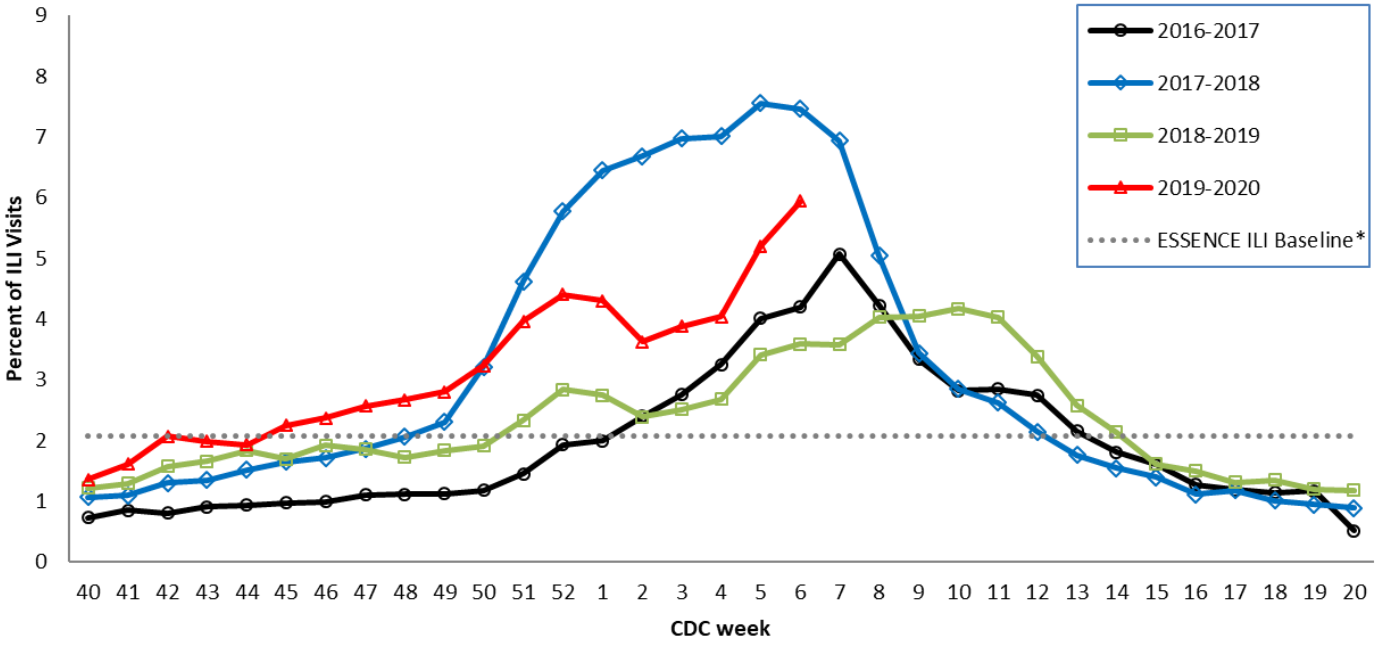
2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).

Figure 7. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, 2016-2020 Influenza Seasons*‡



*The ESSENCE ILI Baseline is the mean percent of ILI visits for each week during the previous three years (2016-18) when percentage of ILI visits were less than 2% of total visits, plus two standard deviations. Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.

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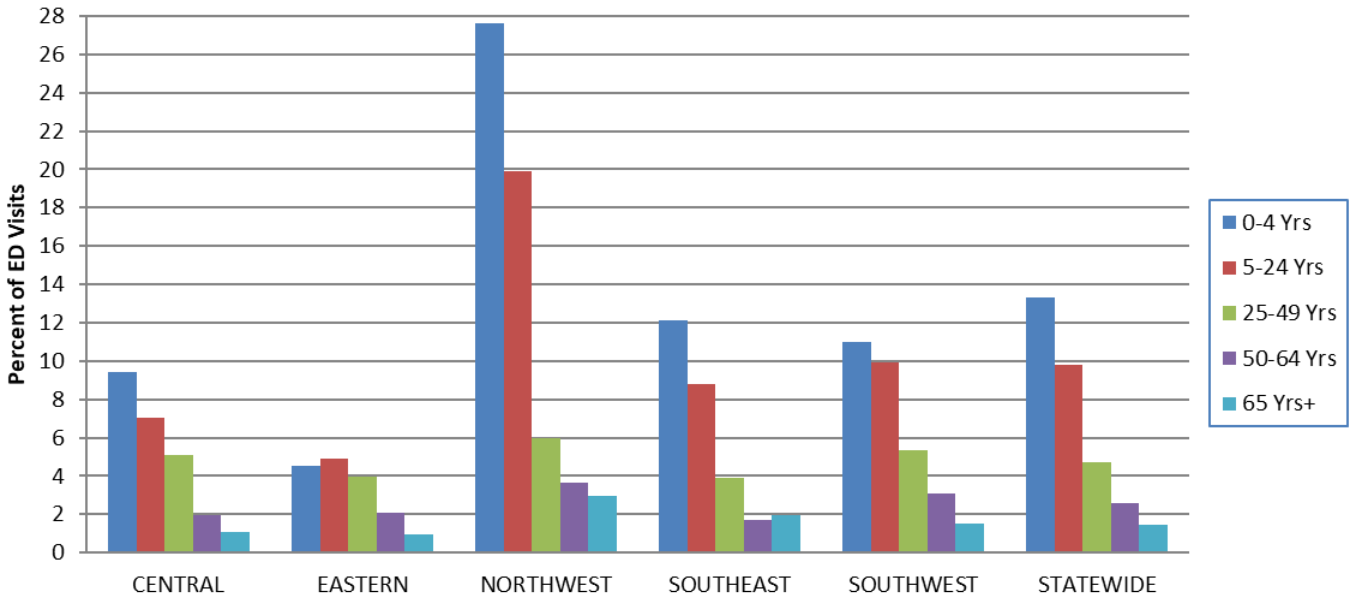

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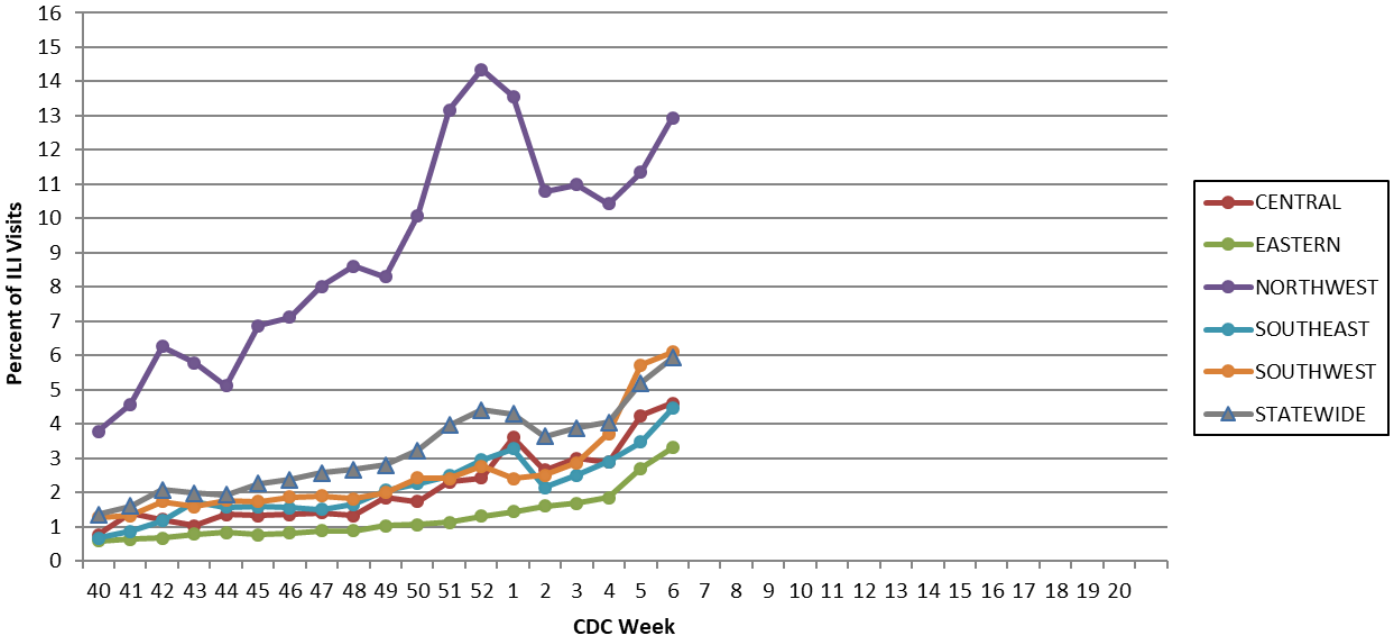

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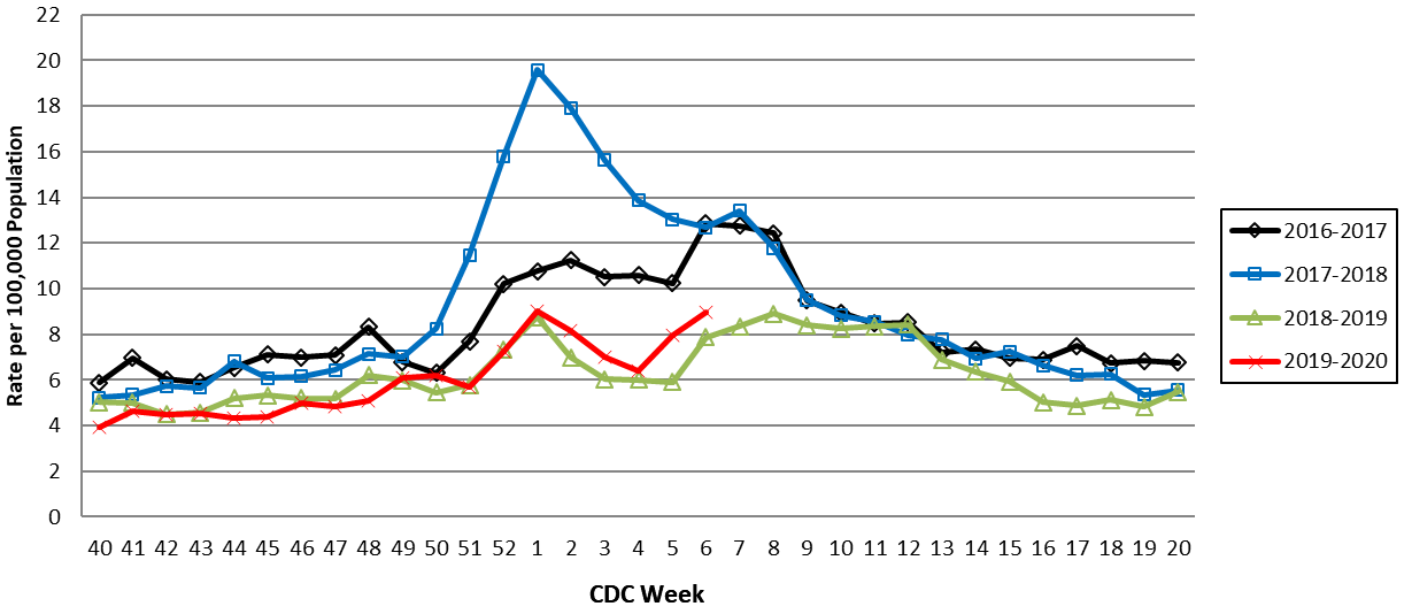
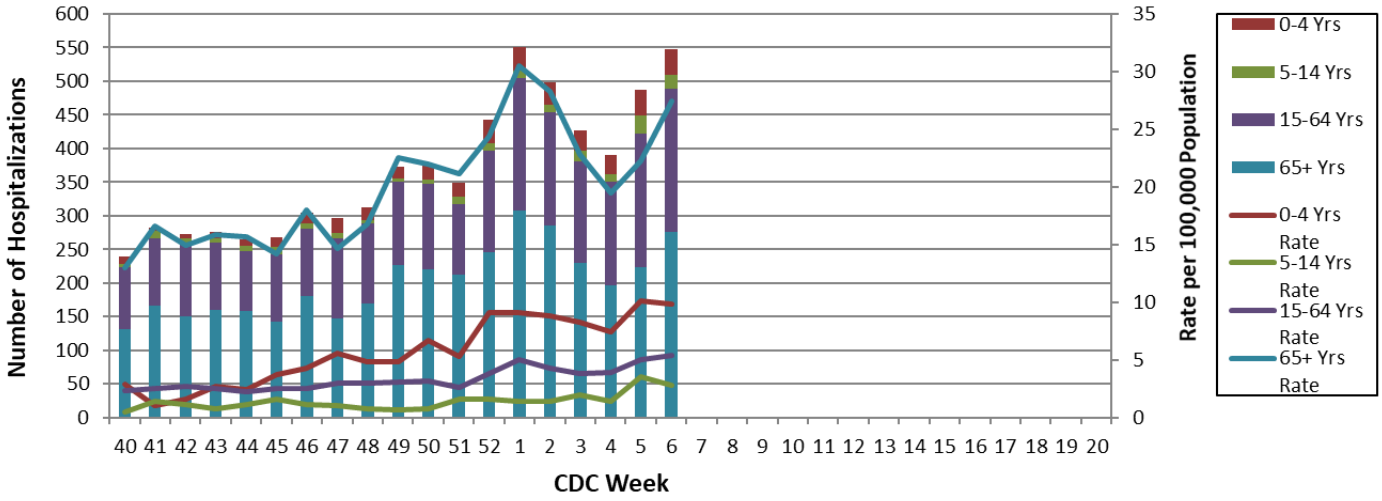
Figure 10. Weekly Rate of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Missouri Hospitals, 2016-2020 Influenza Seasons



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.
Population data from Missouri Census Data Center 2017 (https://census.missouri.edu).

Figure 11. Number of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Participating Missouri Hospitals, by Age Group, Week 6, 2019-2020 Influenza Season



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Missouri Weekly Influenza Surveillance Report
2019-2020 Influenza Season[1]

Week 7: February 9, 2020 – February 15, 2020 Revised

All data are preliminary and may change as more reports are received.

Summary:

- The estimated influenza activity in Missouri is Widespread[2].
- A total of 7,624 laboratory-positive[3] influenza cases (3,648 influenza A, 3,911 influenza B, and 65 untyped) were reported during Week 7. The season-to-date total of laboratory-positive influenza cases is 55,710 (41.3% influenza A, 57.6% influenza B, and 1.1% untyped). Twelve laboratory-positive cases of influenza (7 A H1N1 and 5 B/Victoria) were reported by the Missouri State Public Health Laboratory (MSPHL) during Week 7. The percentage of respiratory specimens testing positive for influenza in Missouri laboratories reporting to the National Respiratory and Enteric Virus Surveillance System (NREVSS) decreased during Week 7 (Figure 6).
- Influenza-like illness (ILI) activity was above baseline for the Missouri Outpatient ILI Surveillance Network (ILINet) and for the hospital emergency room visit chief complaint data reported through ESSENCE. The reported percentage of visits for ILI was 8.50% (Figure 5) and 6.42% (Figure 7) through ILINet and ESSENCE respectively.[4] The ILI data from a small number of sites located in the Northwest Region of the state is currently unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.
- A season-to-date total of 29 influenza-associated deaths have been reported in Missouri as of Week 7.[5] During Week 6, 71 deaths involving Pneumonia and Influenza (P&I) were reported to the Bureau of Vital Records, resulting in a season-to-date total of 901 P&I associated deaths in Missouri.[6] *
- Two influenza outbreak and four school closure have been reported in Missouri as of Week 7.
- Seasonal influenza activity in the United States remained high during Week 6. National influenza surveillance information is prepared by CDC and is included in the weekly FluView report, which is available online at http://www.cdc.gov/flu/weekly/fluactivitysurv.htm.

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[1]The 2019-2020 influenza season begins CDC Week 40 (week ending October 5, 2019) and ends CDC Week 39 (week ending September 26, 2020).

[2]Widespread is defined as: Outbreaks of influenza or increases in ILI cases and recent laboratory-confirmed influenza in at least half the regions of the state with recent laboratory evidence of influenza in the state.

[3]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.

[4]Influenza-like illness (ILI) is defined by ILINet as fever (temperature of 100ºF [37.8ºC] or greater) and a cough and/or a sore throat without a known cause other than influenza. ILI is defined by ESSENCE as Emergency Department chief complaints for Influenza or (FeverPlus and (Cough or SoreThroat) and not NonILIFevers).

[5]All influenza-associated deaths became reportable in Missouri in 2016. These reports are verified by local public health agencies and DHSS.

[6]The P&I data are obtained from vital statistics data using ICD-10 codes, which are available one week later. The P&I data for the CDC Week provided is the most current data available.

*An issue with the P&I data was identified that resulted in some P&I related deaths not to be reported in prior weeks. This issue has been corrected and all prior Influenza Weekly Reports that were impacted have been amended.

Surveillance Data:

Interactive Maps

The jurisdiction-specific influenza data are provided though interactive maps available at http://bit.ly/moflu19. *Click on the jurisdiction to view the influenza data specific to that jurisdiction.*

- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, CDC Week 7**
- **Reported Week-specific Rate per 100,000 Population, CDC Week 7**
- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, Season-to-Date**
- **Reported Rate per 100,000 Population, Season-to-Date**

Data Figures

Figure 1. Number of Laboratory-positive† Influenza Cases by Influenza Type, Missouri, CDC Week 7 (February 9, 2020 – February 15, 2020)*

Influenza Type	Week 5	Week 6	Week 7	2019-2020* Season-to-Date
Influenza A	3,784	5,221	3,648	22,995
Influenza B	5,008	5,982	3,911	32,100
Influenza Unknown Or Untyped	97	126	65	615
Total	8,889	11,329	7,624	55,710

†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv).

Figure 2. Number of Laboratory-positive† Influenza Cases and Case Rates by Age Group, Missouri, CDC Week 7 (February 9, 2020 – February 15, 2020)*‡

Age Group	Week 7 Cases	Week 7 Rate‡	2019-2020* Season-to-Date	2019-2020* Season-to-Date Rate‡
00-04	1,210	323.22	9,774	2,610.86
05-24	3,730	232.47	25,353	1,580.10
25-49	1,696	88.63	12,999	679.33
50-64	632	51.12	4,833	390.90
65+	356	37.28	2,751	288.09
Total	7,624	125.32	55,710	915.73

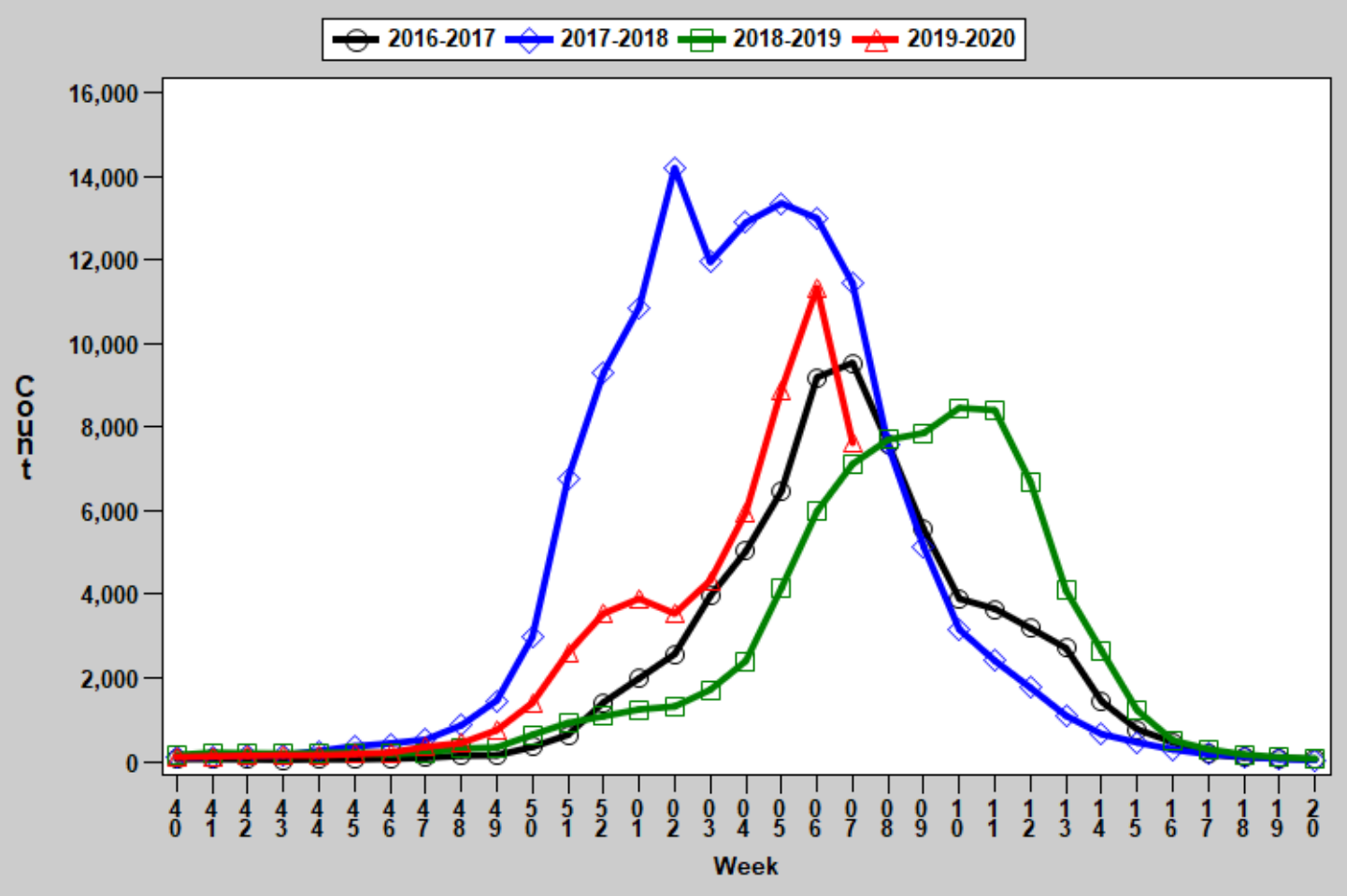
†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
‡Incidence Rate per 100,000 population

Figure 3. Number of Laboratory-positive[†] Influenza Cases and Case Rates by Region, Missouri, CDC Week 7 (February 9, 2020 – February 15, 2020)[*‡]

Region	Week 7 Cases	Week 7 Rate[‡]	2019-2020* Season-to-Date	2019-2020* Season-to-Date Rate[‡]
Central	1,074	158.64	6,726	993.50
Eastern	2,460	108.55	12,021	530.46
Northwest	2,227	139.40	21,969	1,375.19
Southeast	1,019	216.03	5,464	1,158.37
Southwest	844	78.78	9,530	889.57
Total	7,624	125.32	55,710	915.73

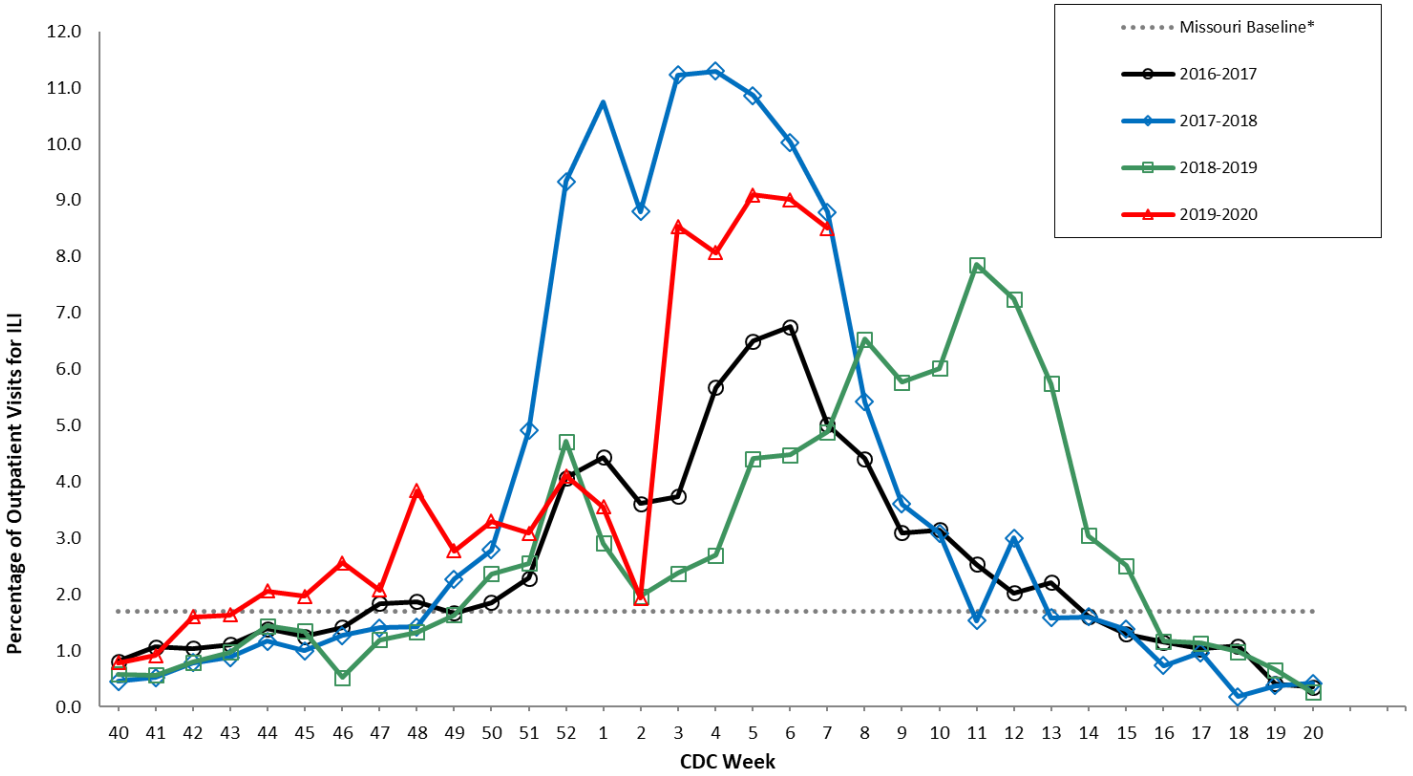
[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
[‡]Incidence Rate per 100,000 population

Figure 4. Number of Laboratory-positive[†] Influenza Cases by CDC Week, Missouri, 2016-2020[*]



[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).Data Source: Missouri Health Information Surveillance System (WebSurv).

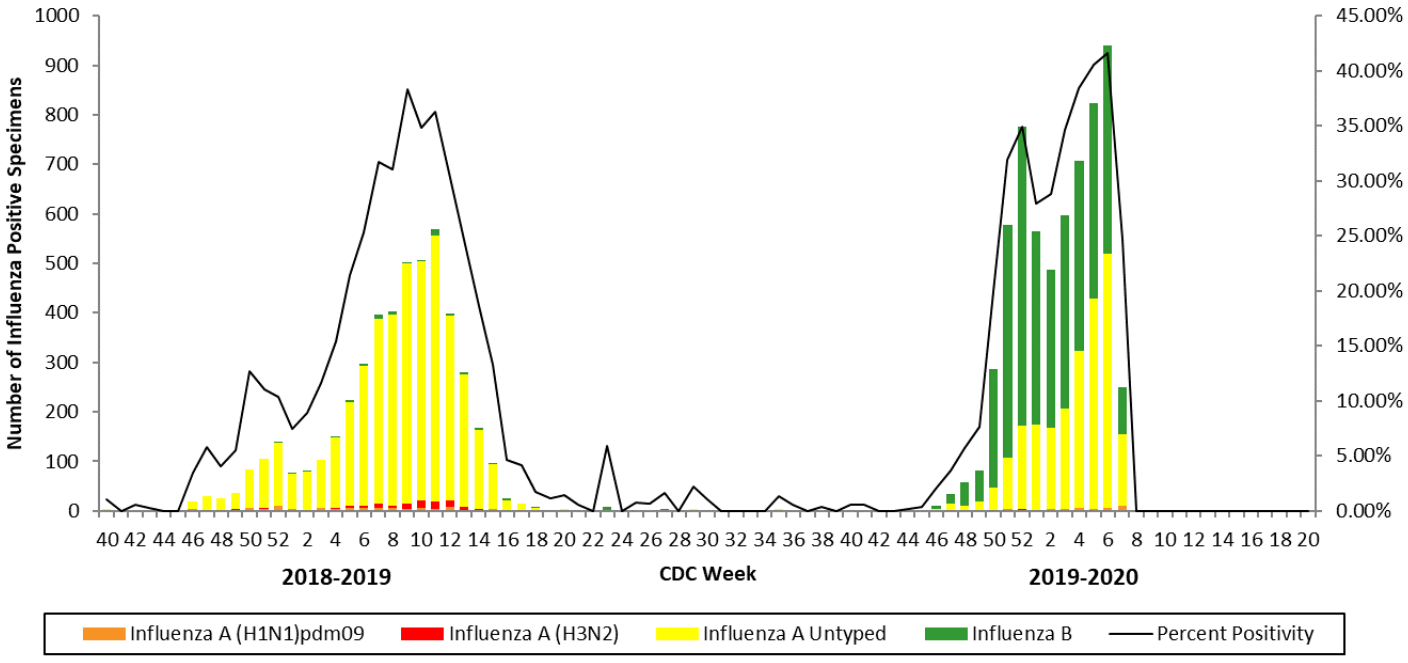
Figure 5. Percentage of Outpatient Visits for Influenza-like Illness (ILI), Missouri Outpatient ILI Surveillance Network (ILINet) 2016-2020*†



*The ILINet Region 7 (MO, IA, KS, NE) baseline is the mean percentage of patient visits for ILI during non-influenza weeks for the previous three seasons, plus two standard deviations. A non-influenza week is defined as periods of two or more consecutive weeks in which each week accounted for less than 2% of the season's total number of specimens that tested positive for influenza. Data Source: U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Centers for Disease Control and Prevention (CDC).

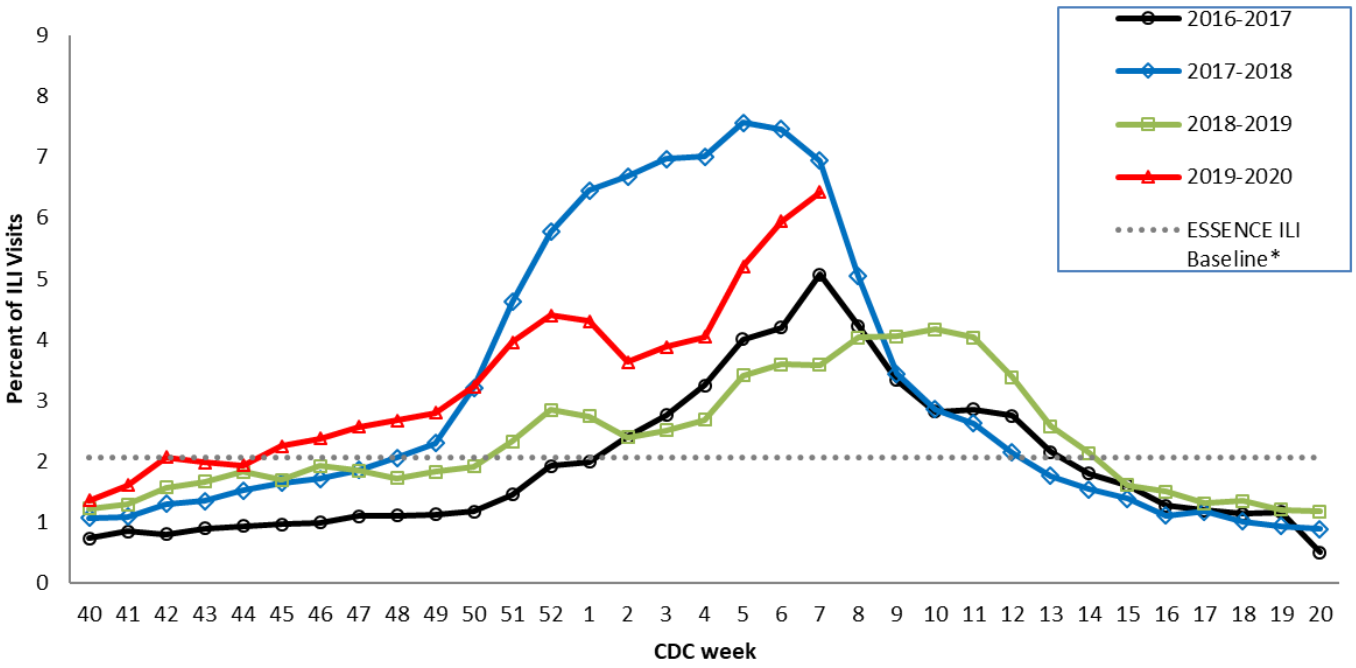
†2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).

Figure 6. Season-to-Date PCR (+) Tests for Influenza in Missouri



Data Source: National Respiratory and Enteric Virus Surveillance System (NREVSS), Centers for Disease Control and Prevention (CDC).
2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).

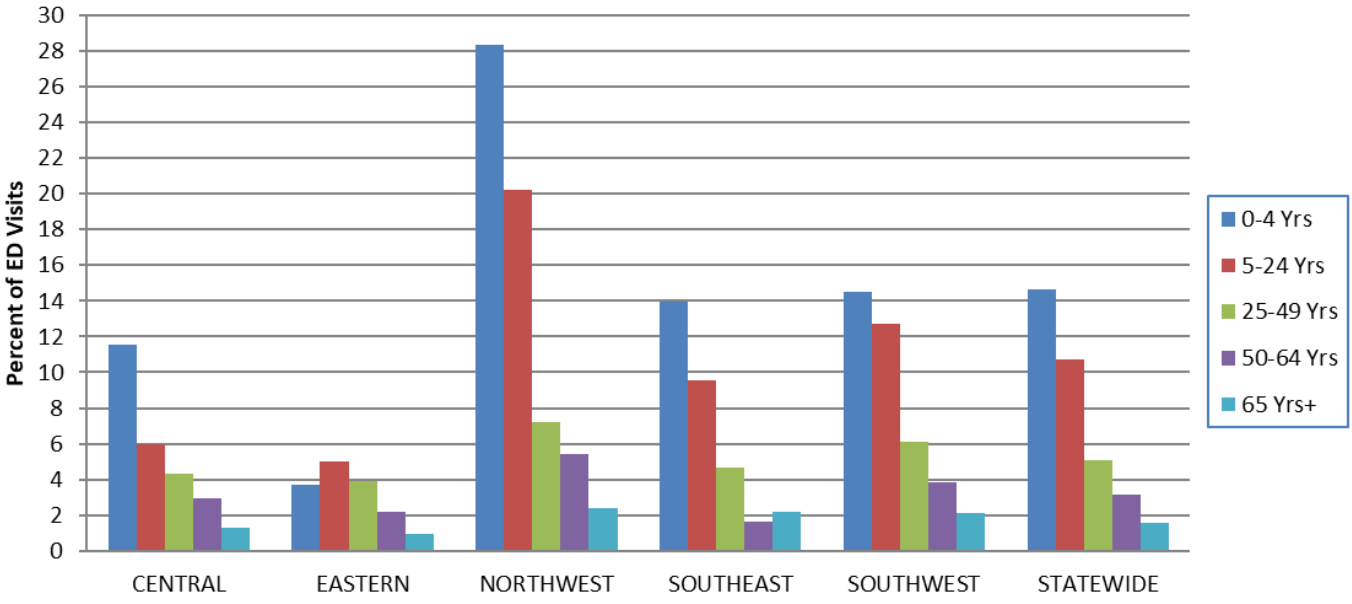
Figure 7. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, 2016-2020 Influenza Seasons*‡



*The ESSENCE ILI Baseline is the mean percent of ILI visits for each week during the previous three years (2016-18) when percentage of ILI visits were less than 2% of total visits, plus two standard deviations. Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.

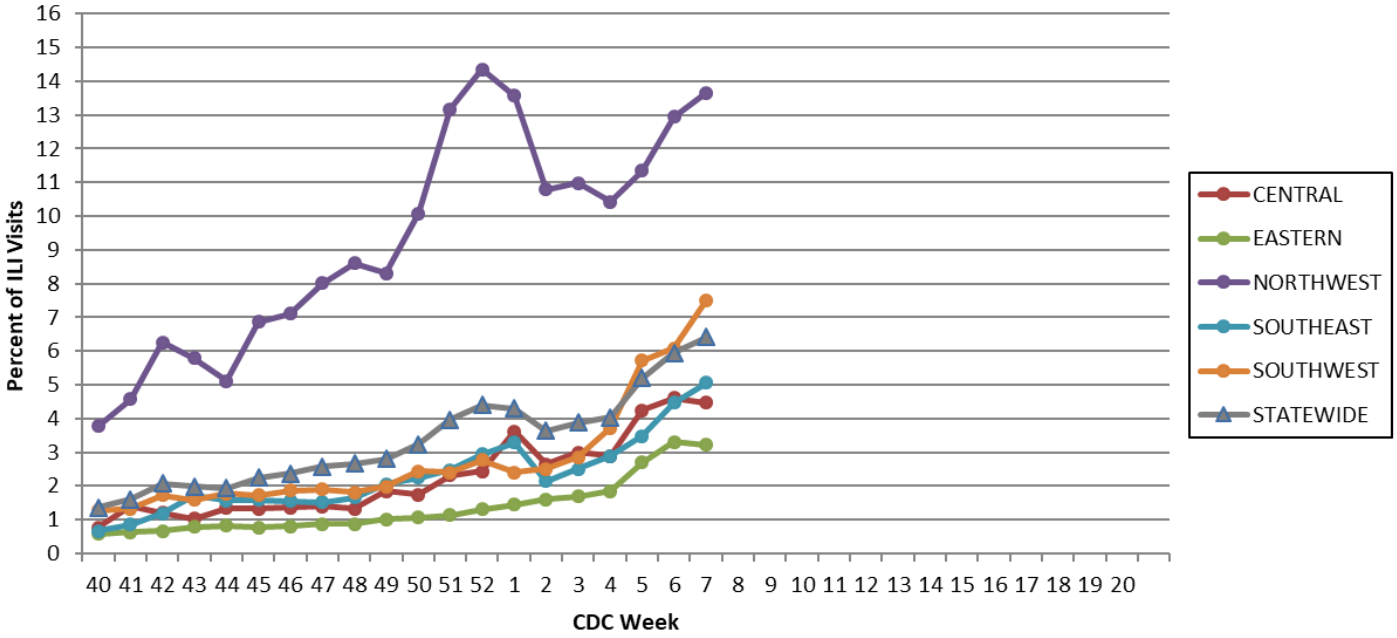
‡The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 8. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Age Group, Region and Statewide, Week 7, 2020*



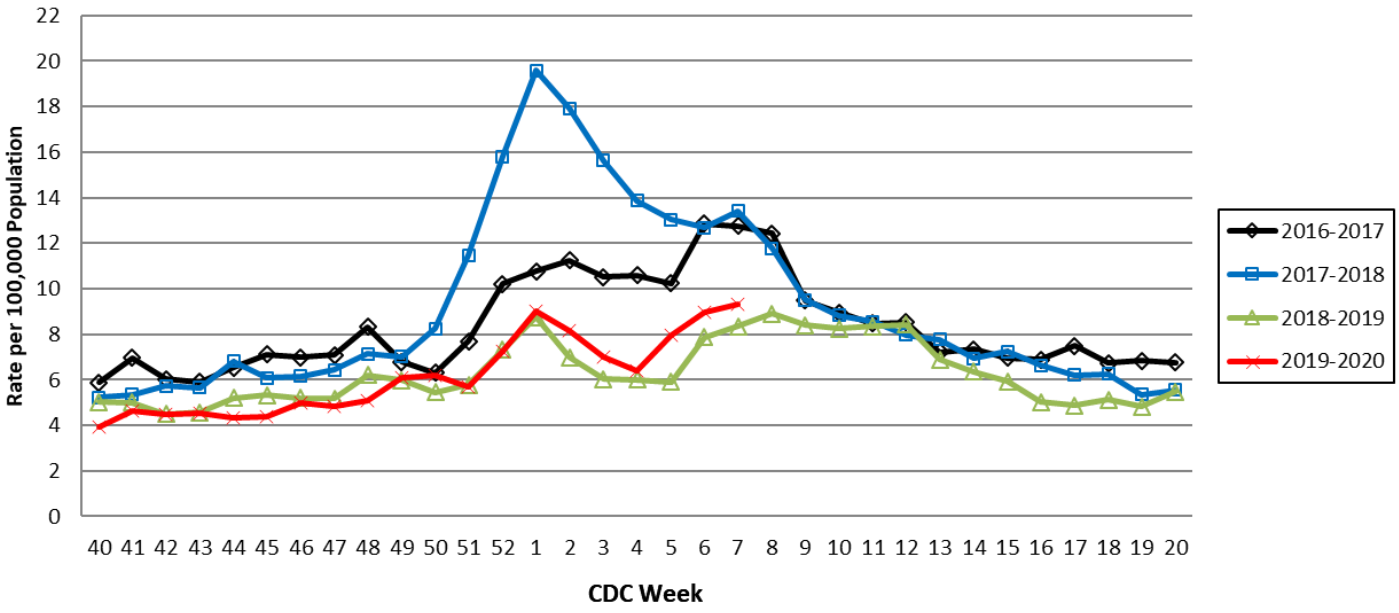
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 9. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Region and Statewide, 2019-2020 Influenza Season*



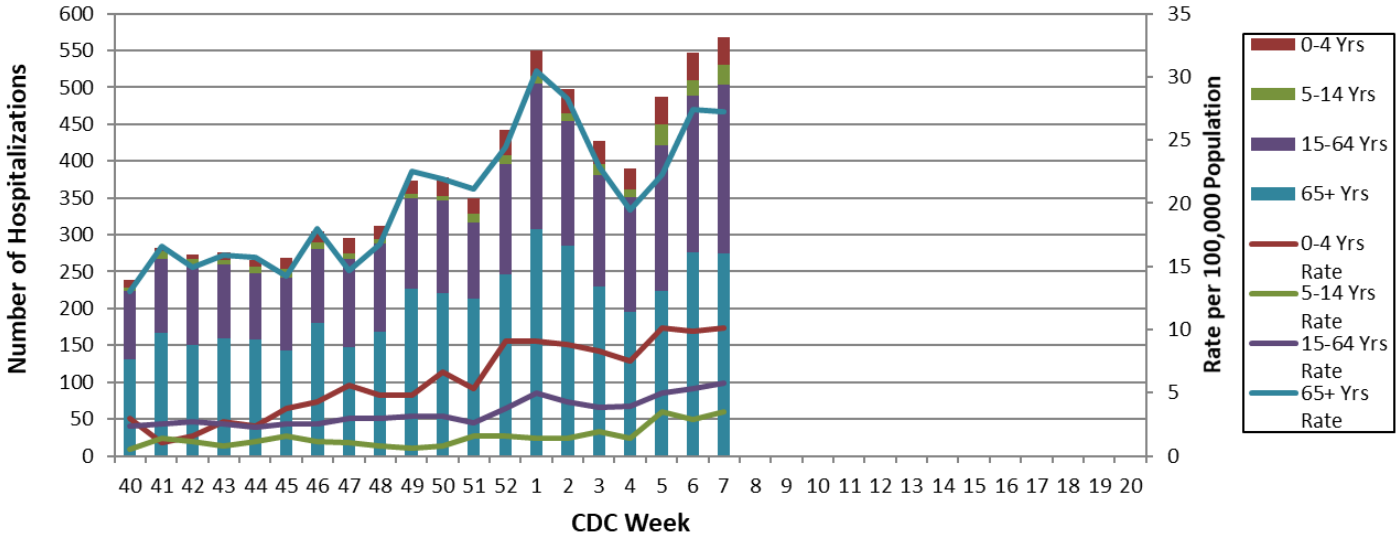
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 10. Weekly Rate of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Missouri Hospitals, 2016-2020 Influenza Seasons



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.
Population data from Missouri Census Data Center 2017 (https://census.missouri.edu).

Figure 11. Number of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Participating Missouri Hospitals, by Age Group, Week 7, 2019-2020 Influenza Season



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.

Additional Influenza Data Sources:

Centers for Disease Control and Prevention: National Influenza Surveillance (FluView):
http://www.cdc.gov/flu/weekly/fluactivitysurv.htm

The National Respiratory and Enteric Virus Surveillance System (NREVSS):
https://www.cdc.gov/surveillance/nrevss/

World Health Organization: International Influenza Surveillance:
http://www.who.int/influenza/surveillance_monitoring/en/

Missouri Weekly Influenza Surveillance Report
2019-2020 Influenza Season[1]

Week 8: February 16, 2020 – February 22, 2020

All data are preliminary and may change as more reports are received.

Summary:

- The estimated influenza activity in Missouri is Widespread[2].

- A total of 8,230 laboratory-positive[3] influenza cases (4,225 influenza A, 3,975 influenza B, and 30 untyped) were reported during Week 8. The season-to-date total of laboratory-positive influenza cases is 69,382 (43.2% influenza A, 55.8% influenza B, and 1% untyped). Eight laboratory-positive cases of influenza (5 A H1N1 and 3 B/Victoria) were reported by the Missouri State Public Health Laboratory (MSPHL) during Week 8. The percentage of respiratory specimens testing positive for influenza in Missouri laboratories reporting to the National Respiratory and Enteric Virus Surveillance System (NREVSS) decreased during Week 8 (Figure 6).

- Influenza-like illness (ILI) activity was above baseline for the Missouri Outpatient ILI Surveillance Network (ILINet) and for the hospital emergency room visit chief complaint data reported through ESSENCE. The reported percentage of visits for ILI was 8.31% (Figure 5) and 6.59% (Figure 7) through ILINet and ESSENCE respectively.[4] The ILI data from a small number of sites located in the Northwest Region of the state is currently unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

- A season-to-date total of 40 influenza-associated deaths have been reported in Missouri as of Week 8.[5] During Week 7, 72 deaths involving Pneumonia and Influenza (P&I) were reported to the Bureau of Vital Records, resulting in a season-to-date total of 973 P&I associated deaths in Missouri.[6] *

- Four influenza outbreak and six school closure have been reported in Missouri as of Week 8.

- Seasonal influenza activity in the United States remained high but decreased slightly during Week 7. National influenza surveillance information is prepared by CDC and is included in the weekly FluView report, which is available online at http://www.cdc.gov/flu/weekly/fluactivitysurv.htm.

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[1]The 2019-2020 influenza season begins CDC Week 40 (week ending October 5, 2019) and ends CDC Week 39 (week ending September 26, 2020).

[2]Widespread is defined as: Outbreaks of influenza or increases in ILI cases and recent laboratory-confirmed influenza in at least half the regions of the state with recent laboratory evidence of influenza in the state.

[3]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.

[4]Influenza-like illness (ILI) is defined by ILINet as fever (temperature of 100ºF [37.8ºC] or greater) and a cough and/or a sore throat without a known cause other than influenza. ILI is defined by ESSENCE as Emergency Department chief complaints for Influenza or (FeverPlus and (Cough or SoreThroat) and not NonILIFevers).

[5]All influenza-associated deaths became reportable in Missouri in 2016. These reports are verified by local public health agencies and DHSS.

[6]The P&I data are obtained from vital statistics data using ICD-10 codes, which are available one week later. The P&I data for the CDC Week provided is the most current data available.

*An issue with the P&I data was identified that resulted in some P&I related deaths not to be reported in prior weeks. This issue has been corrected and all prior Influenza Weekly Reports that were impacted have been amended.

Surveillance Data:

Interactive Maps

The jurisdiction-specific influenza data are provided though interactive maps available at http://bit.ly/moflu19. *Click on the jurisdiction to view the influenza data specific to that jurisdiction.*

- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, CDC Week 8**
- **Reported Week-specific Rate per 100,000 Population, CDC Week 8**
- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, Season-to-Date**
- **Reported Rate per 100,000 Population, Season-to-Date**

Data Figures

Figure 1. Number of Laboratory-positive† Influenza Cases by Influenza Type, Missouri, CDC Week 8 (February 16, 2020 – February 22, 2020)*

Influenza Type	Week 6	Week 7	Week 8	2019-2020* Season-to-Date
Influenza A	5,499	6,038	4,225	29,946
Influenza B	6,321	6,198	3,975	38,755
Influenza Unknown Or Untyped	132	91	30	681
Total	11,952	12,327	8,230	69,382

†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv).

Figure 2. Number of Laboratory-positive† Influenza Cases and Case Rates by Age Group, Missouri, CDC Week 8 (February 16, 2020 – February 22, 2020)*‡

Age Group	Week 8 Cases	Week 8 Rate‡	2019-2020* Season-to-Date	2019-2020* Season-to-Date Rate‡
00-04	1,432	382.52	12,135	3,241.53
05-24	3,639	226.80	31,438	1,959.35
25-49	1,876	98.04	16,182	845.68
50-64	796	64.38	6,134	496.13
65+	487	51.00	3,493	365.79
Total	8,230	135.28	69,382	1,140.46

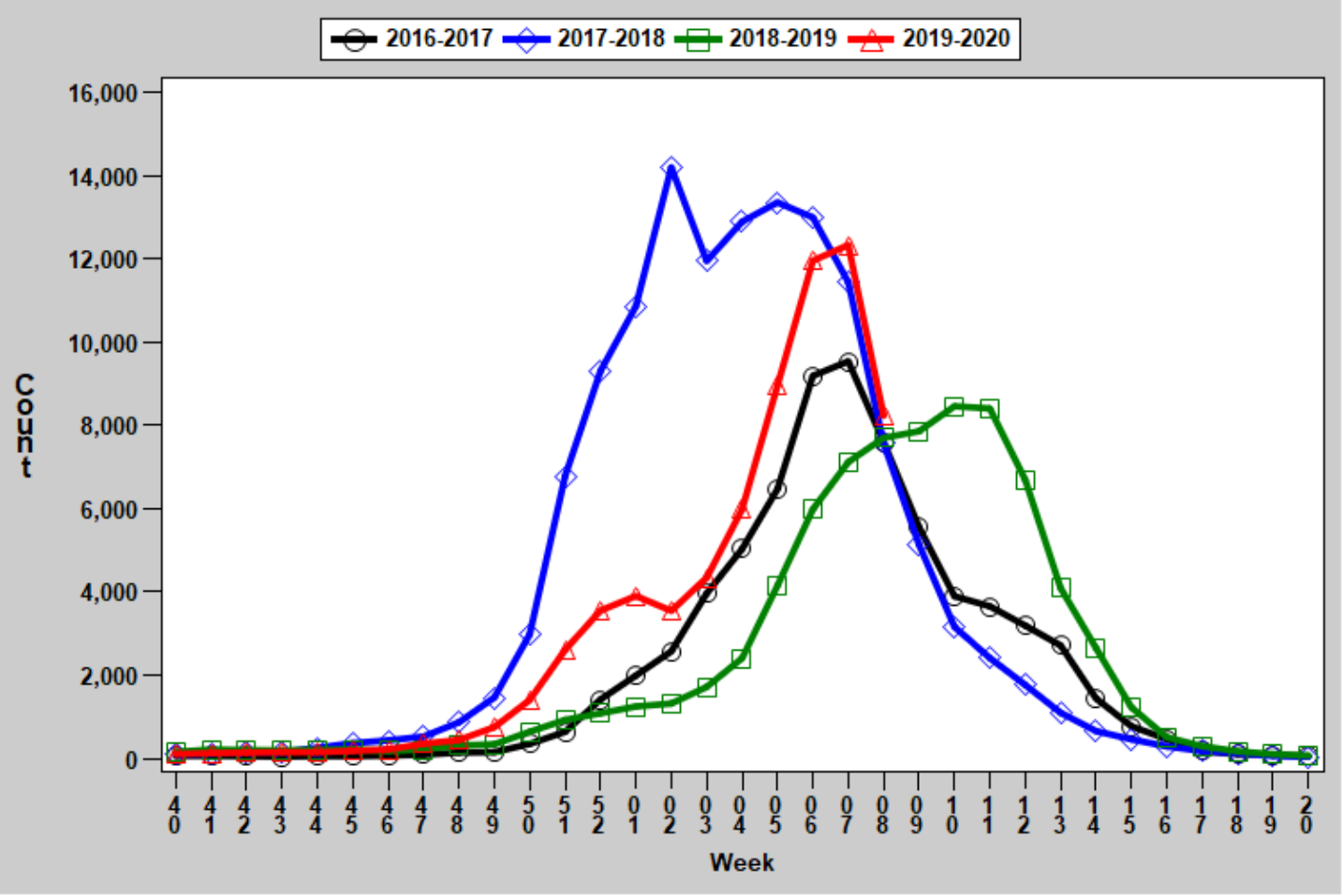
†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
‡Incidence Rate per 100,000 population

Figure 3. Number of Laboratory-positive[†] Influenza Cases and Case Rates by Region, Missouri, CDC Week 8 (February 16, 2020 – February 22, 2020)[*‡]

Region	Week 8 Cases	Week 8 Rate[‡]	2019-2020* Season-to-Date	2019-2020* Season-to-Date Rate[‡]
Central	893	131.91	8,239	1,216.99
Eastern	2,280	100.61	15,754	695.19
Northwest	2,040	127.70	25,294	1,583.33
Southeast	1,003	212.64	6,857	1,453.68
Southwest	2,014	188.00	13,238	1,235.69
Total	8,230	135.28	69,382	1,140.46

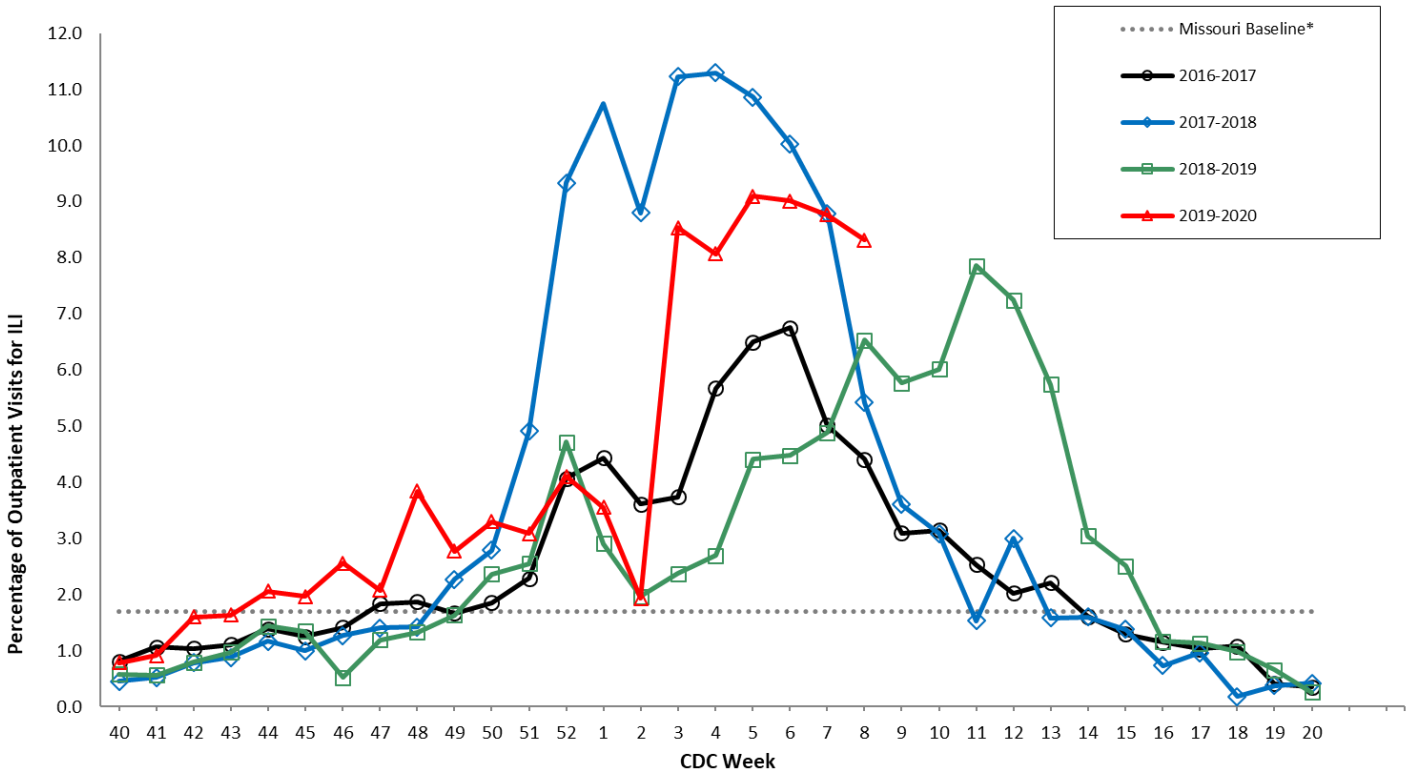
[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
[‡]Incidence Rate per 100,000 population

Figure 4. Number of Laboratory-positive[†] Influenza Cases by CDC Week, Missouri, 2016-2020[*]



[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).Data Source: Missouri Health Information Surveillance System (WebSurv).

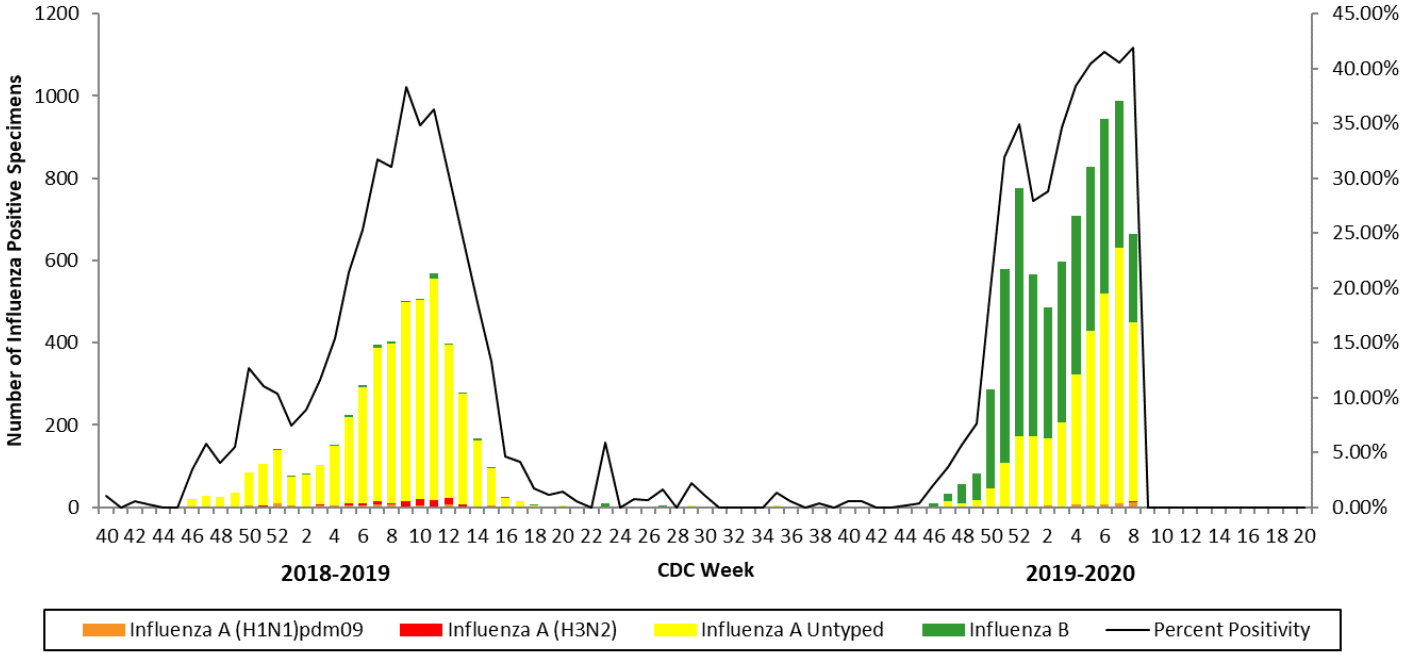
Figure 5. Percentage of Outpatient Visits for Influenza-like Illness (ILI), Missouri Outpatient ILI Surveillance Network (ILINet) 2016-2020*†



*The ILINet Region 7 (MO, IA, KS, NE) baseline is the mean percentage of patient visits for ILI during non-influenza weeks for the previous three seasons, plus two standard deviations. A non-influenza week is defined as periods of two or more consecutive weeks in which each week accounted for less than 2% of the season's total number of specimens that tested positive for influenza. Data Source: U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Centers for Disease Control and Prevention (CDC).

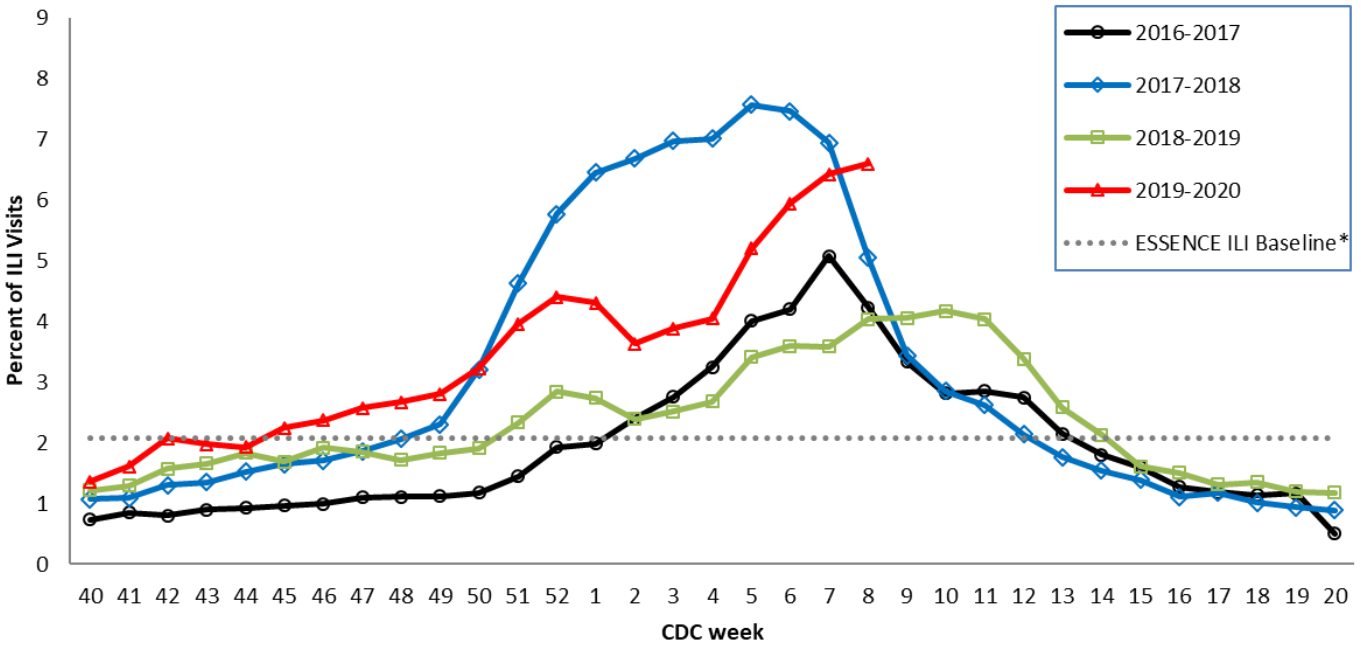
†2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).

Figure 6. Season-to-Date PCR (+) Tests for Influenza in Missouri



Data Source: National Respiratory and Enteric Virus Surveillance System (NREVSS), Centers for Disease Control and Prevention (CDC).
2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).

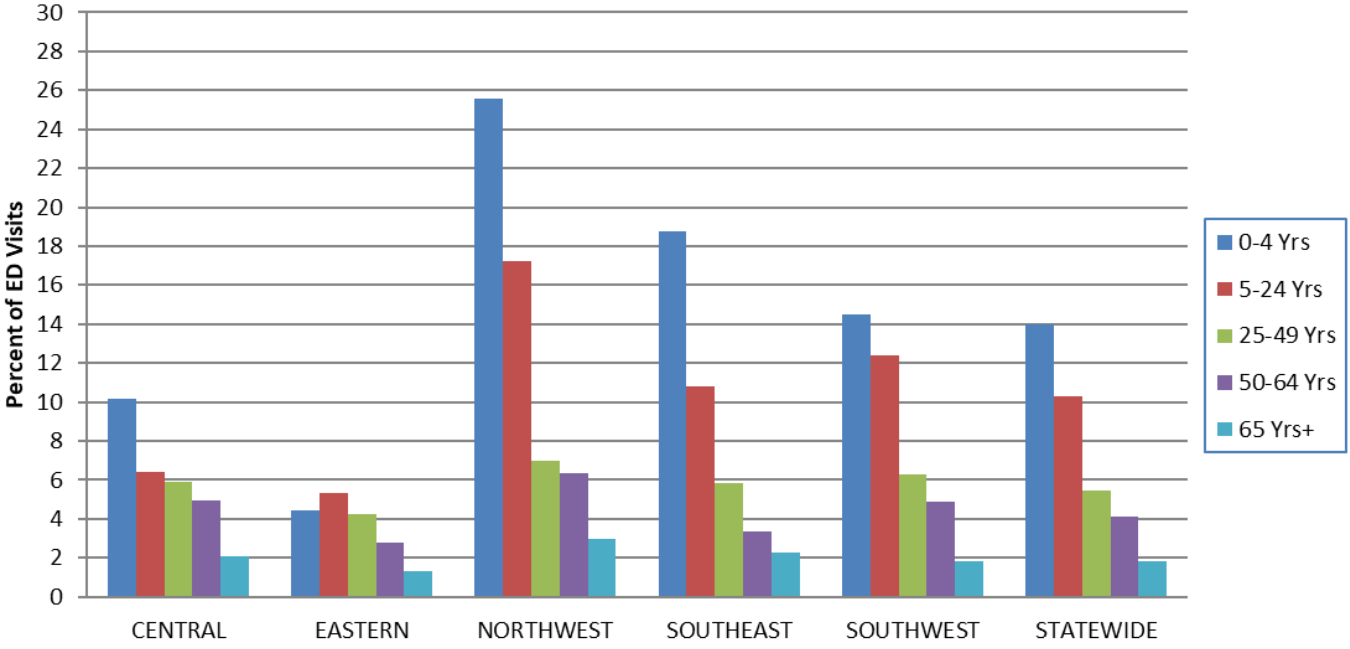
Figure 7. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, 2016-2020 Influenza Seasons*‡



*The ESSENCE ILI Baseline is the mean percent of ILI visits for each week during the previous three years (2016-18) when percentage of ILI visits were less than 2% of total visits, plus two standard deviations. Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.

‡The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 8. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Age Group, Region and Statewide, Week 8, 2020*



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
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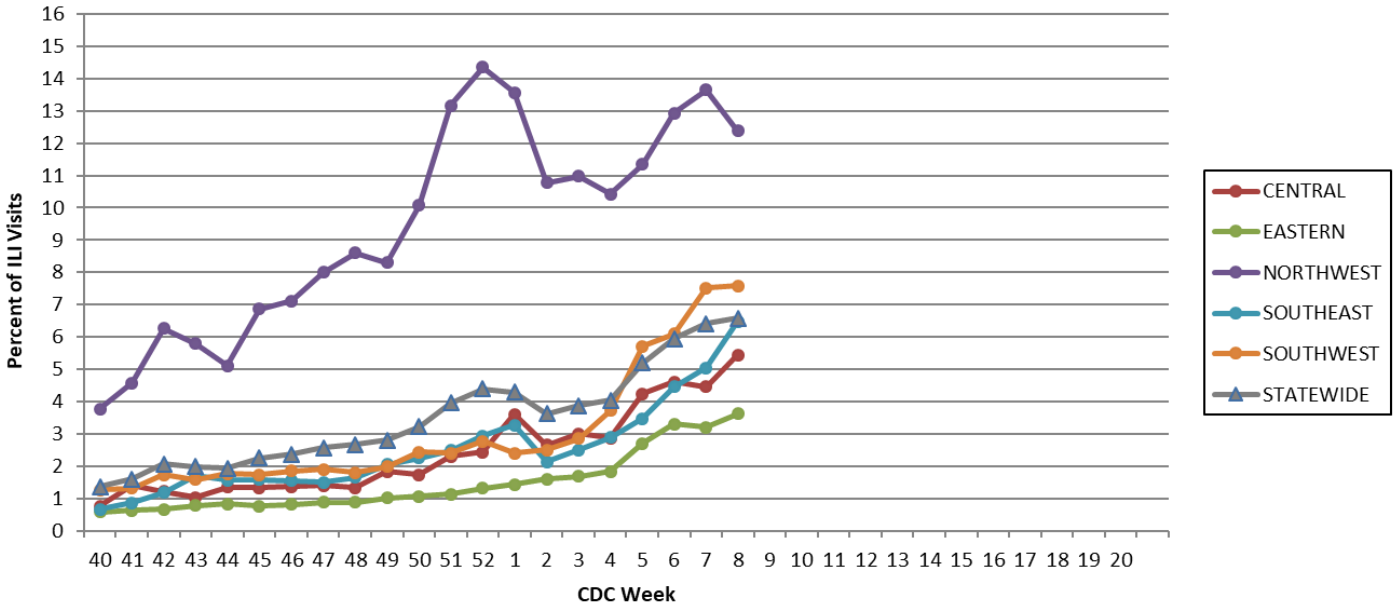
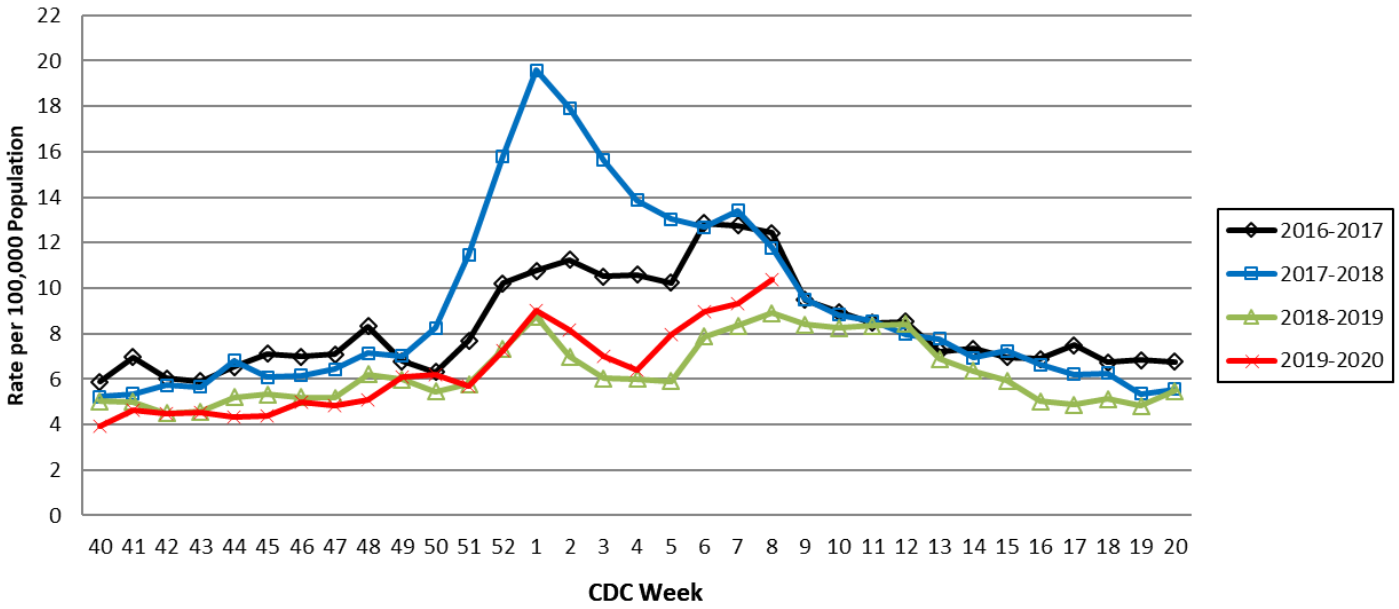


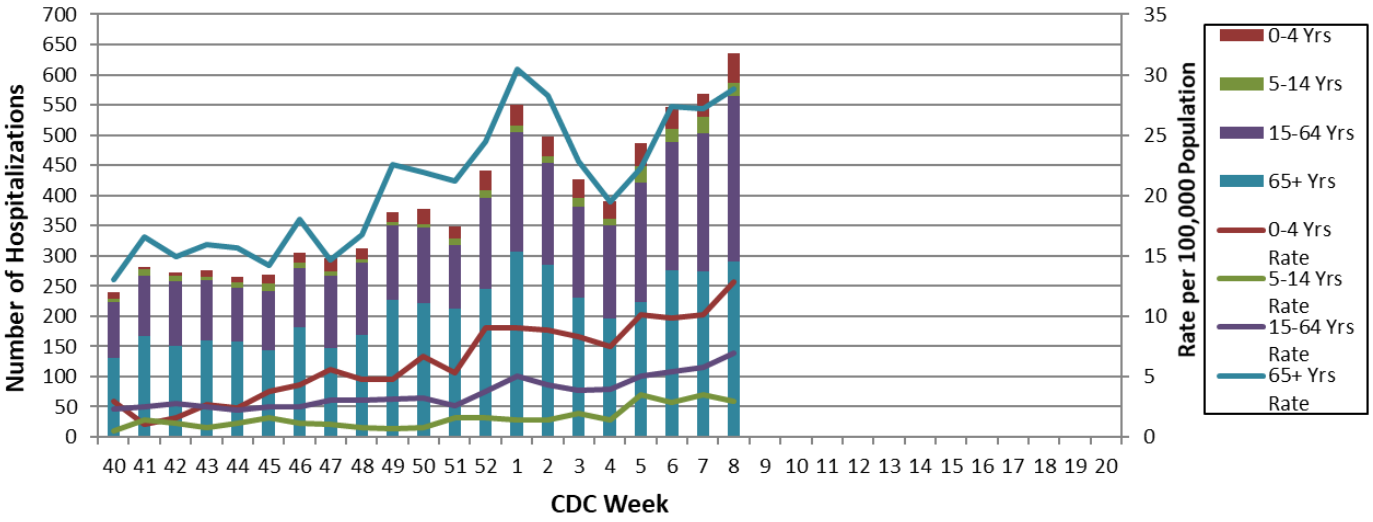
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 10. Weekly Rate of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Missouri Hospitals, 2016-2020 Influenza Seasons



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.
Population data from Missouri Census Data Center 2017 (https://census.missouri.edu).

Figure 11. Number of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Participating Missouri Hospitals, by Age Group, Week 8, 2019-2020 Influenza Season



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.

Additional Influenza Data Sources:

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The National Respiratory and Enteric Virus Surveillance System (NREVSS):
https://www.cdc.gov/surveillance/nrevss/

World Health Organization: International Influenza Surveillance:
http://www.who.int/influenza/surveillance_monitoring/en/

Missouri Weekly Influenza Surveillance Report
2019-2020 Influenza Season[1]

Week 9: February 23, 2020 – February 29, 2020

All data are preliminary and may change as more reports are received.

Summary:

- The estimated influenza activity in Missouri is Widespread[2].
- A total of 9,351 laboratory-positive[3] influenza cases (5,197 influenza A, 4,095 influenza B, and 59 untyped) were reported during Week 9. The season-to-date total of laboratory-positive influenza cases is 83,505 (44.9% influenza A, 54.1% influenza B, and 1% untyped). Ten laboratory-positive cases of influenza (3 A H1N1 and 7 B/Victoria) were reported by the Missouri State Public Health Laboratory (MSPHL) during Week 9. The percentage of respiratory specimens testing positive for influenza in Missouri laboratories reporting to the National Respiratory and Enteric Virus Surveillance System (NREVSS) slightly decreased during Week 9 (Figure 6).
- Influenza-like illness (ILI) activity was above baseline for the Missouri Outpatient ILI Surveillance Network (ILINet) and for the hospital emergency room visit chief complaint data reported through ESSENCE. The reported percentage of visits for ILI was 10.13% (Figure 5) and 6.39% (Figure 7) through ILINet and ESSENCE respectively.[4] The ILI data from a small number of sites located in the Northwest Region of the state is currently unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.
- A season-to-date total of 51 influenza-associated deaths have been reported in Missouri as of Week 9.[5] During Week 8, 71 deaths involving Pneumonia and Influenza (P&I) were reported to the Bureau of Vital Records, resulting in a season-to-date total of 1,044 P&I associated deaths in Missouri.[6]
- Eight influenza outbreaks and seven school closures have been reported in Missouri as of Week 9.
- Seasonal influenza activity in the United States remained high but decreased slightly for the second week in a row during Week 8. National influenza surveillance information is prepared by CDC and is included in the weekly FluView report, which is available online at http://www.cdc.gov/flu/weekly/fluactivitysurv.htm.

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[1]The 2019-2020 influenza season begins CDC Week 40 (week ending October 5, 2019) and ends CDC Week 39 (week ending September 26, 2020).

[2]Widespread is defined as: Outbreaks of influenza or increases in ILI cases and recent laboratory-confirmed influenza in at least half the regions of the state with recent laboratory evidence of influenza in the state.

[3]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.

[4]Influenza-like illness (ILI) is defined by ILINet as fever (temperature of 100°F [37.8°C] or greater) and a cough and/or a sore throat without a known cause other than influenza. ILI is defined by ESSENCE as Emergency Department chief complaints for Influenza or (FeverPlus and (Cough or SoreThroat) and not NonILIFevers).

[5]All influenza-associated deaths became reportable in Missouri in 2016. These reports are verified by local public health agencies and DHSS.

[6]The P&I data are obtained from vital statistics data using ICD-10 codes, which are available one week later. The P&I data for the CDC Week provided is the most current data available.

Surveillance Data:

Interactive Maps

The jurisdiction-specific influenza data are provided though interactive maps available at http://bit.ly/moflu19. *Click on the jurisdiction to view the influenza data specific to that jurisdiction.*

- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, CDC Week 9**
- **Reported Week-specific Rate per 100,000 Population, CDC Week 9**
- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, Season-to-Date**
- **Reported Rate per 100,000 Population, Season-to-Date**

Data Figures

Figure 1. Number of Laboratory-positive† Influenza Cases by Influenza Type, Missouri, CDC Week 9 (February 23, 2020 – February 29, 2020)*

Influenza Type	Week 7	Week 8	Week 9	2019-2020* Season-to-Date
Influenza A	6,211	6,381	5,197	37,565
Influenza B	6,374	5,962	4,095	45,179
Influenza Unknown Or Untyped	90	51	59	761
Total	12,675	12,394	9,351	83,505

†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv).

Figure 2. Number of Laboratory-positive† Influenza Cases and Case Rates by Age Group, Missouri, CDC Week 9 (February 23, 2020 – February 29, 2020)*‡

Age Group	Week 9 Cases	Week 9 Rate‡	2019-2020* Season-to-Date	2019-2020* Season-to-Date Rate‡
00-04	1,570	419.38	14,597	3,899.19
05-24	4,008	249.80	37,645	2,346.19
25-49	2,201	115.02	19,389	1,013.27
50-64	956	77.32	7,508	607.26
65+	616	64.51	4,366	457.21
Total	9,351	153.71	83,505	1,372.61

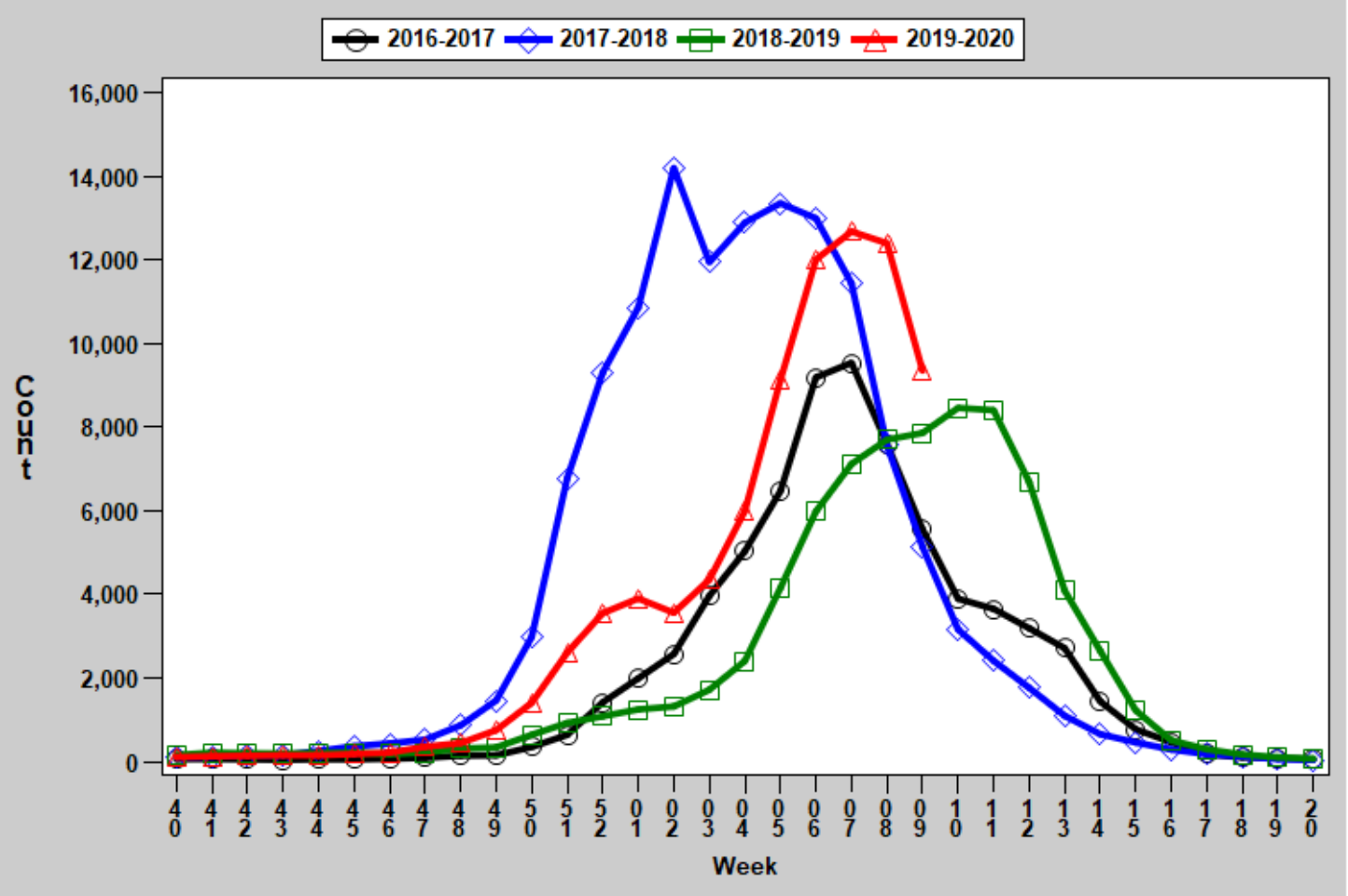
†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
‡Incidence Rate per 100,000 population

Figure 3. Number of Laboratory-positive[†] Influenza Cases and Case Rates by Region, Missouri, CDC Week 9 (February 23, 2020 – February 29, 2020)[*‡]

Region	Week 9 Cases	Week 9 Rate[‡]	2019-2020* Season-to-Date	2019-2020* Season-to-Date Rate[‡]
Central	691	102.07	9,962	1,471.50
Eastern	3,724	164.33	21,636	954.75
Northwest	2,097	131.27	27,801	1,740.26
Southeast	1,091	231.29	8,642	1,832.10
Southwest	1,748	163.17	15,464	1,443.48
Total	9,351	153.71	83,505	1,372.61

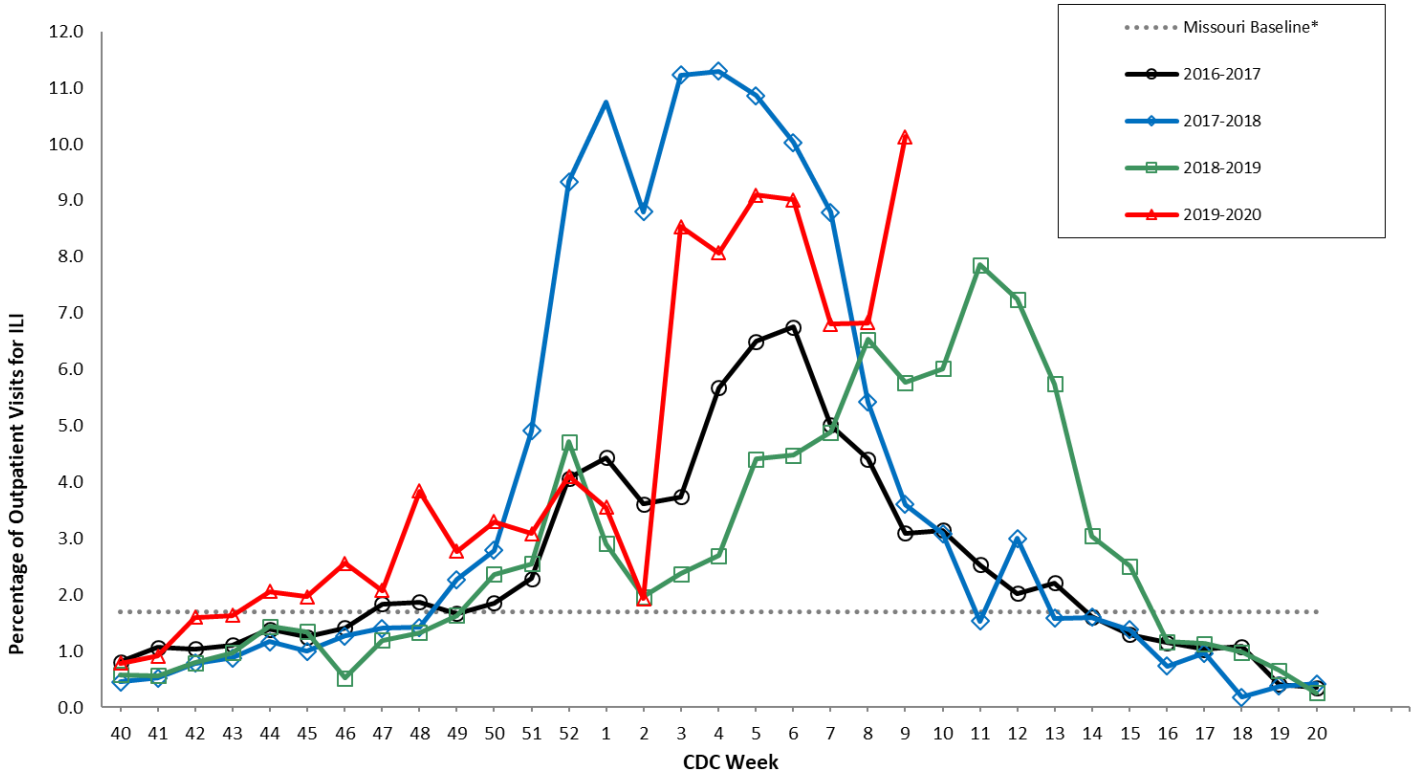
[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
[‡]Incidence Rate per 100,000 population

Figure 4. Number of Laboratory-positive[†] Influenza Cases by CDC Week, Missouri, 2016-2020[*]



[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).Data Source: Missouri Health Information Surveillance System (WebSurv).

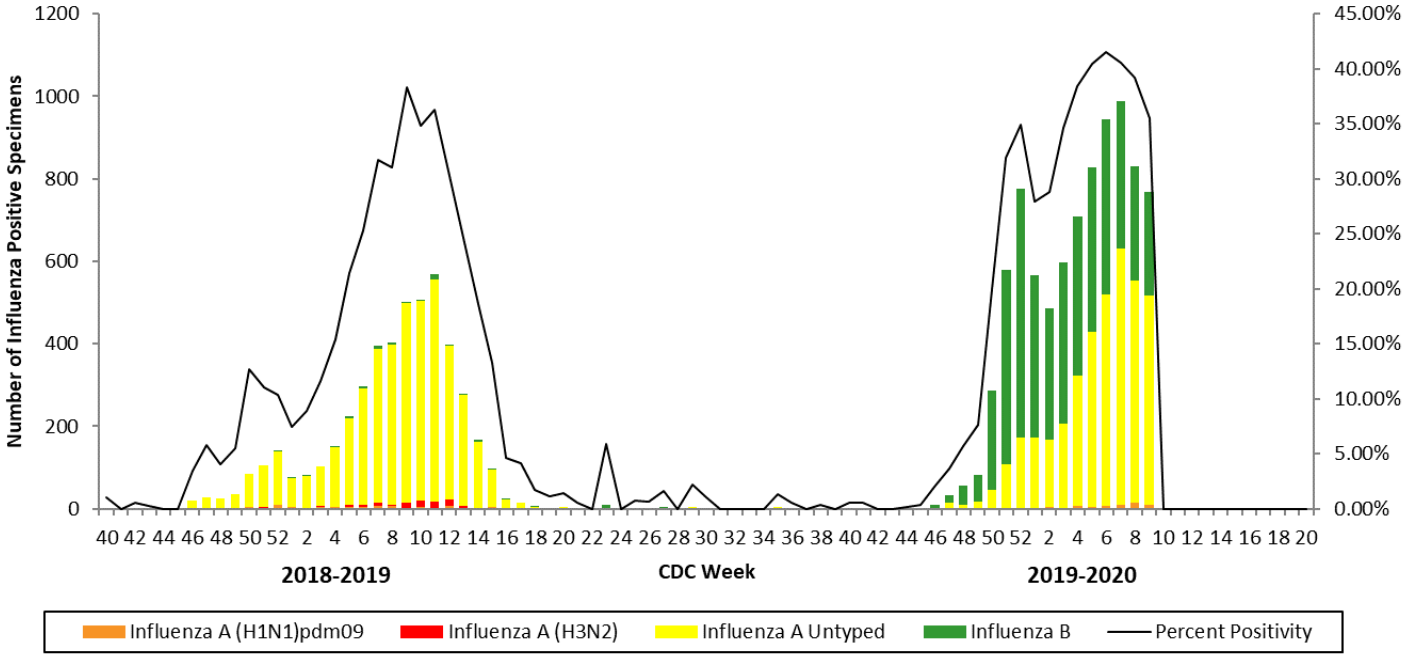
Figure 5. Percentage of Outpatient Visits for Influenza-like Illness (ILI), Missouri Outpatient ILI Surveillance Network (ILINet) 2016-2020*†



*The ILINet Region 7 (MO, IA, KS, NE) baseline is the mean percentage of patient visits for ILI during non-influenza weeks for the previous three seasons, plus two standard deviations. A non-influenza week is defined as periods of two or more consecutive weeks in which each week accounted for less than 2% of the season's total number of specimens that tested positive for influenza. Data Source: U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Centers for Disease Control and Prevention (CDC).

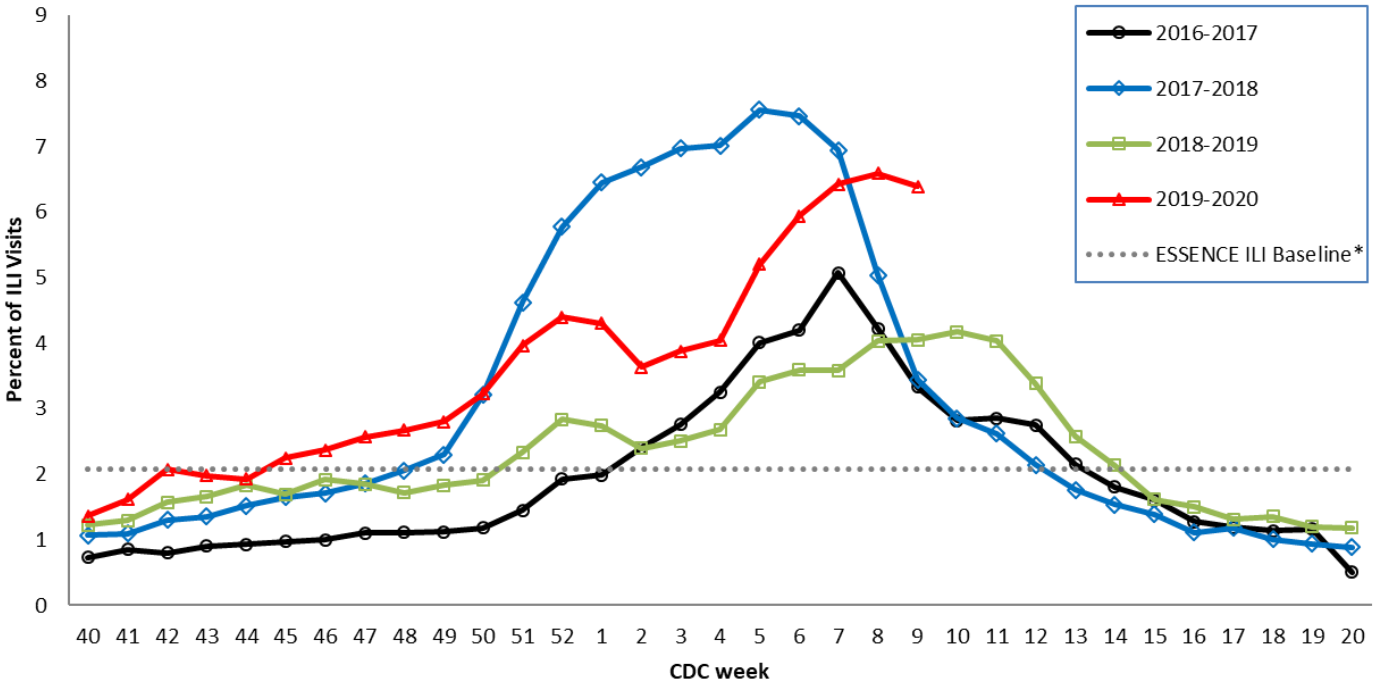
†2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).

Figure 6. Season-to-Date PCR (+) Tests for Influenza in Missouri



Data Source: National Respiratory and Enteric Virus Surveillance System (NREVSS), Centers for Disease Control and Prevention (CDC). 2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).

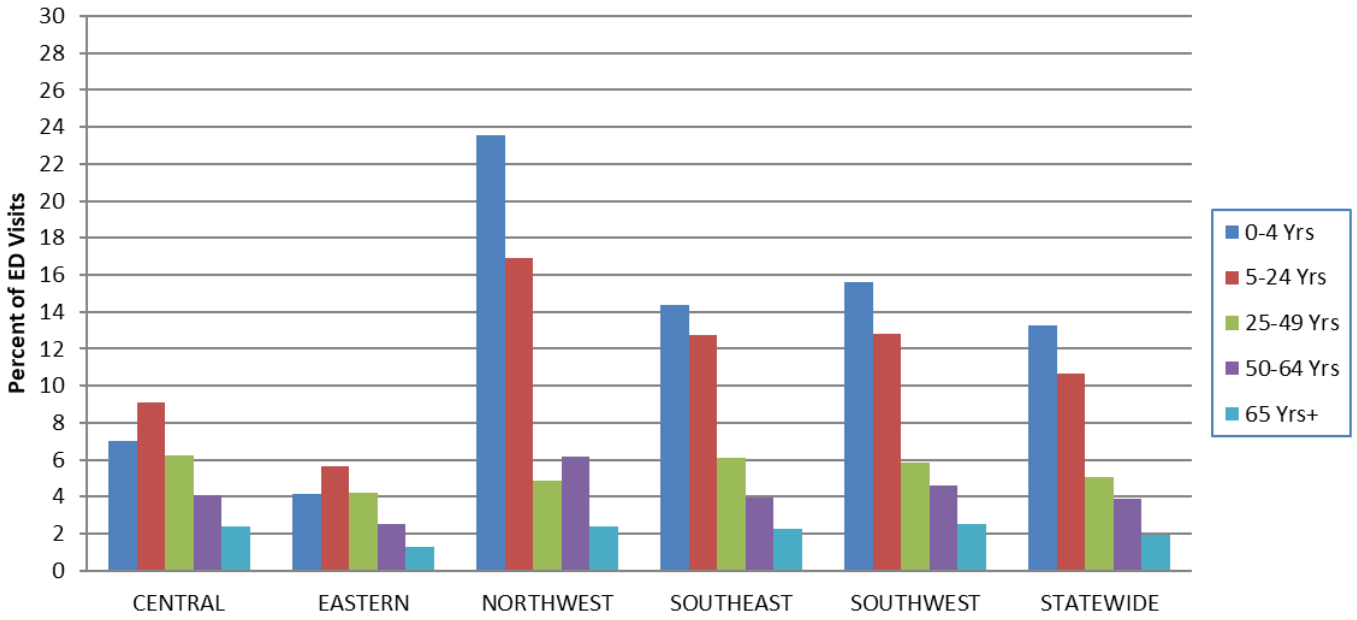
Figure 7. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, 2016-2020 Influenza Seasons*‡



*The ESSENCE ILI Baseline is the mean percent of ILI visits for each week during the previous three years (2016-18) when percentage of ILI visits were less than 2% of total visits, plus two standard deviations. Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.

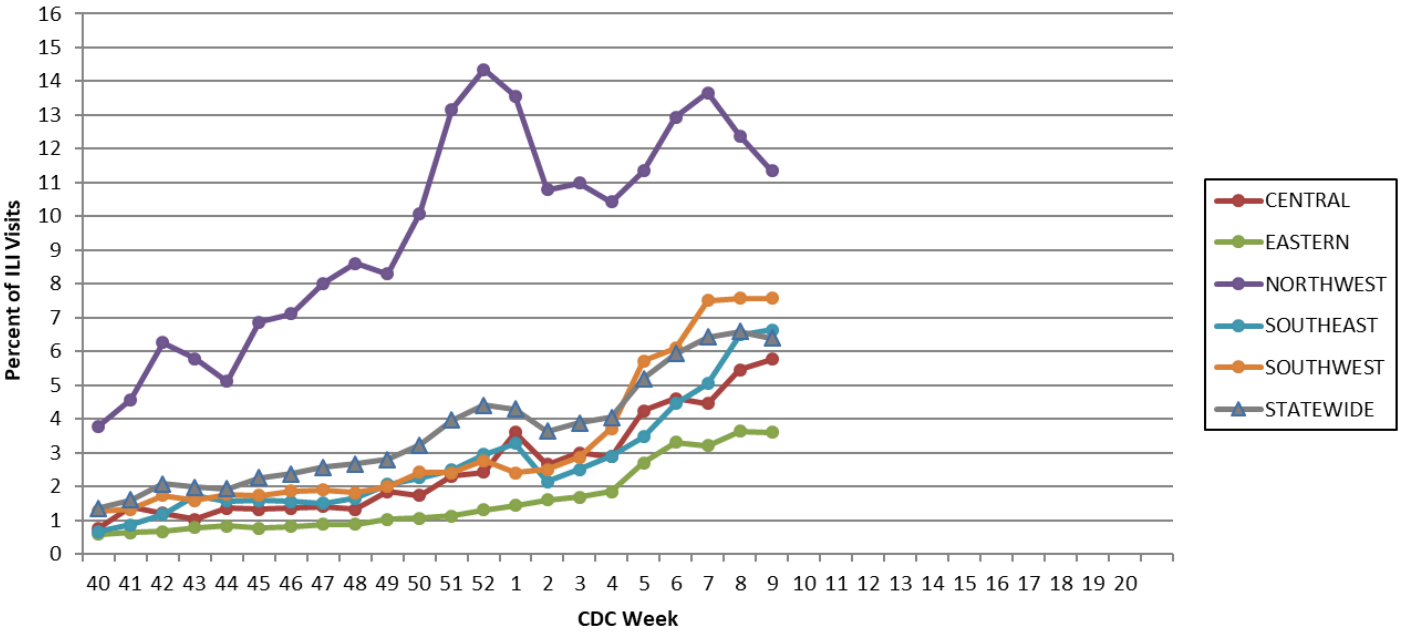
‡The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 8. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Age Group, Region and Statewide, Week 9, 2020*



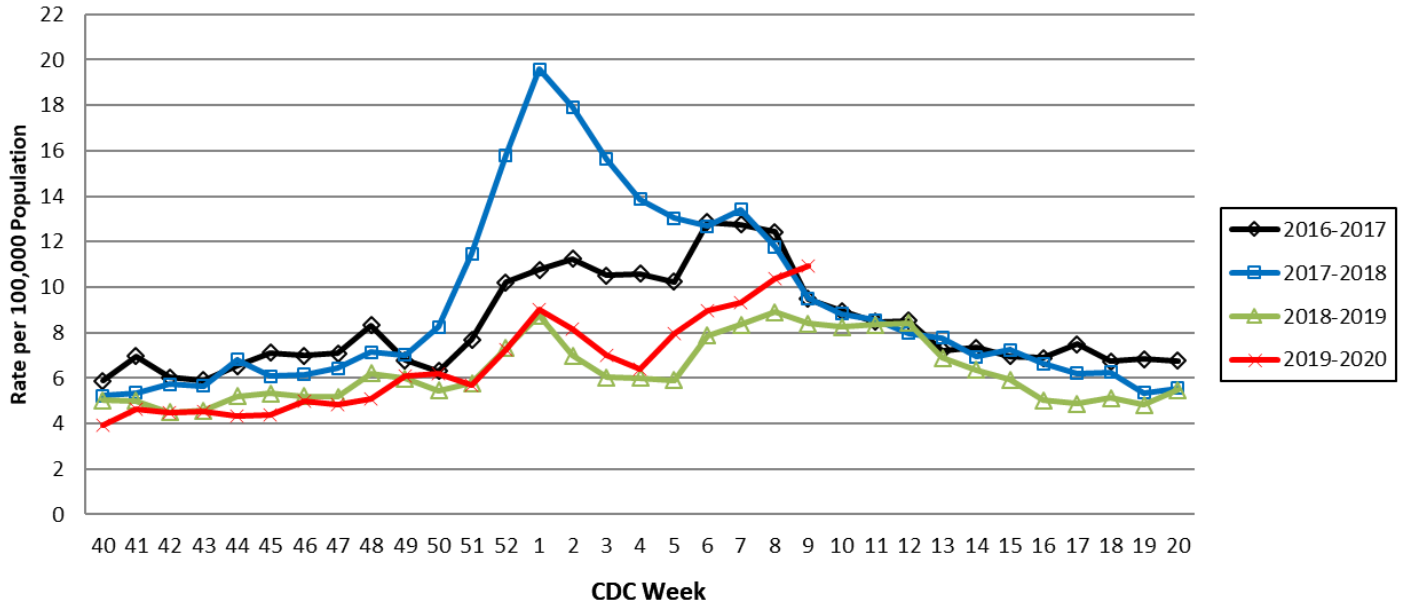
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 9. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Region and Statewide, 2019-2020 Influenza Season*



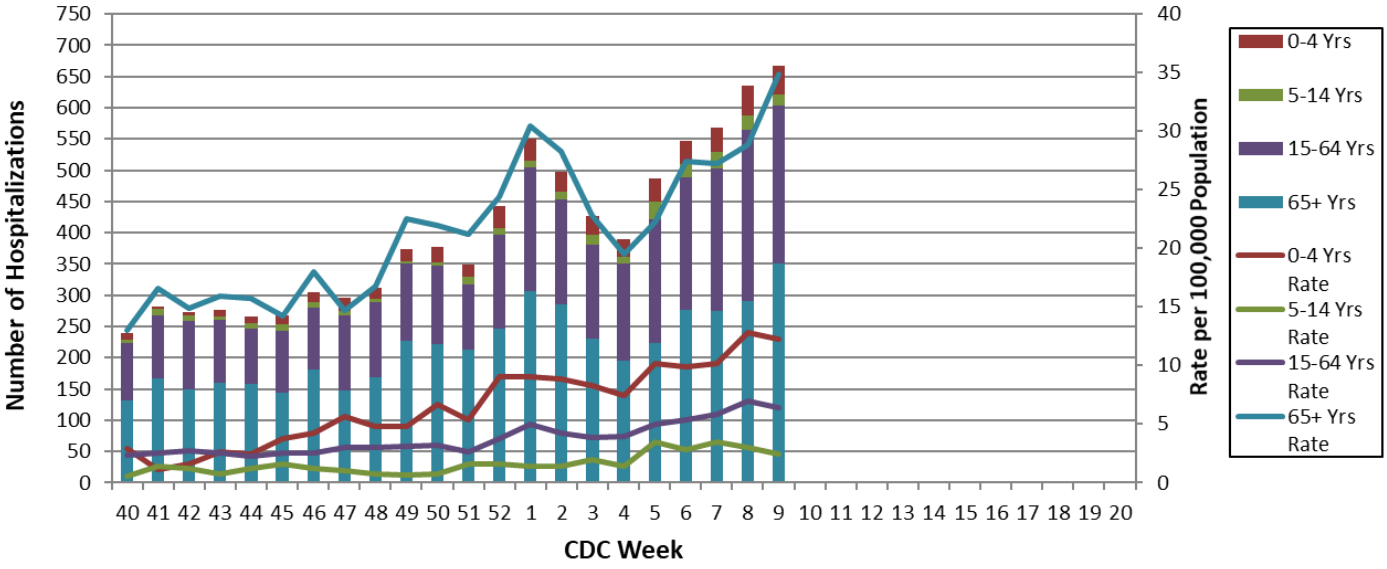
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 10. Weekly Rate of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Missouri Hospitals, 2016-2020 Influenza Seasons



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.
Population data from Missouri Census Data Center 2017 (https://census.missouri.edu).

Figure 11. Number of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Participating Missouri Hospitals, by Age Group, Week 9, 2019-2020 Influenza Season



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.

Additional Influenza Data Sources:

Centers for Disease Control and Prevention: National Influenza Surveillance (FluView):
http://www.cdc.gov/flu/weekly/fluactivitysurv.htm

The National Respiratory and Enteric Virus Surveillance System (NREVSS):
https://www.cdc.gov/surveillance/nrevss/

World Health Organization: International Influenza Surveillance:
http://www.who.int/influenza/surveillance_monitoring/en/

Missouri Weekly Influenza Surveillance Report 2019-2020 Influenza Season[1]

Week 10: March 1, 2020 – March 7, 2020

All data are preliminary and may change as more reports are received.

Summary:

- The estimated influenza activity in Missouri is Widespread[2].
- A total of 8,222 laboratory-positive[3] influenza cases (4,885 influenza A, 3,318 influenza B, and 19 untyped) were reported during Week 10. The season-to-date total of laboratory-positive influenza cases is 95,608 (46.7% influenza A, 52.5% influenza B, and 0.8% untyped). Seven laboratory-positive cases of influenza (5 A H1N1 and 2 B/Victoria) were reported by the Missouri State Public Health Laboratory (MSPHL) during Week 10. The percentage of respiratory specimens testing positive for influenza in Missouri laboratories reporting to the National Respiratory and Enteric Virus Surveillance System (NREVSS) decreased during Week 10 (Figure 6).
- Influenza-like illness (ILI) activity was above baseline for the Missouri Outpatient ILI Surveillance Network (ILINet) and for the hospital emergency room visit chief complaint data reported through ESSENCE. The reported percentage of visits for ILI was 10.80% (Figure 5) and 5.83% (Figure 7) through ILINet and ESSENCE respectively.[4] The ILI data from a small number of sites located in the Northwest Region of the state is currently unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.
- A season-to-date total of 63 influenza-associated deaths have been reported in Missouri as of Week 10.[5] During Week 9, 75 deaths involving Pneumonia and Influenza (P&I) were reported to the Bureau of Vital Records, resulting in a season-to-date total of 1,119 P&I associated deaths in Missouri.[6]
- Eleven influenza outbreaks and seven school closures have been reported in Missouri as of Week 10.
- Seasonal influenza activity in the United States remained high but decreased for the third week in a row during Week 9. National influenza surveillance information is prepared by CDC and is included in the weekly FluView report, which is available online at http://www.cdc.gov/flu/weekly/fluactivitysurv.htm.

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[1]The 2019-2020 influenza season begins CDC Week 40 (week ending October 5, 2019) and ends CDC Week 39 (week ending September 26, 2020).

[2]Widespread is defined as: Outbreaks of influenza or increases in ILI cases and recent laboratory-confirmed influenza in at least half the regions of the state with recent laboratory evidence of influenza in the state.

[3]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.

[4]Influenza-like illness (ILI) is defined by ILINet as fever (temperature of 100°F [37.8°C] or greater) and a cough and/or a sore throat without a known cause other than influenza. ILI is defined by ESSENCE as Emergency Department chief complaints for Influenza or (FeverPlus and (Cough or SoreThroat) and not NonILIFevers).

[5]All influenza-associated deaths became reportable in Missouri in 2016. These reports are verified by local public health agencies and DHSS.

[6]The P&I data are obtained from vital statistics data using ICD-10 codes, which are available one week later. The P&I data for the CDC Week provided is the most current data available.

Surveillance Data:

Interactive Maps

The jurisdiction-specific influenza data are provided though interactive maps available at http://bit.ly/moflu19. *Click on the jurisdiction to view the influenza data specific to that jurisdiction.*

- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, CDC Week 10**
- **Reported Week-specific Rate per 100,000 Population, CDC Week 10**
- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, Season-to-Date**
- **Reported Rate per 100,000 Population, Season-to-Date**

Data Figures

Figure 1. Number of Laboratory-positive† Influenza Cases by Influenza Type, Missouri, CDC Week 10 (March 1, 2020 – March 7, 2020)*

Influenza Type	Week 8	Week 9	Week 10	2019-2020* Season-to-Date
Influenza A	6,852	6,882	4,885	44,614
Influenza B	6,339	5,399	3,318	50,188
Influenza Unknown Or Untyped	74	38	19	806
Total	13,265	12,319	8,222	95,608

†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv).

Figure 2. Number of Laboratory-positive† Influenza Cases and Case Rates by Age Group, Missouri, CDC Week 10 (March 1, 2020 – March 7, 2020)*‡

Age Group	Week 10 Cases	Week 10 Rate‡	2019-2020* Season-to-Date	2019-2020* Season-to-Date Rate‡
00-04	1,157	309.06	16,365	4,371.46
05-24	3,363	209.60	42,776	2,665.98
25-49	2,345	122.55	22,605	1,181.34
50-64	824	66.65	8,724	705.61
65+	532	55.71	5,137	537.95
Total	8,222	135.15	95,608	1,571.55

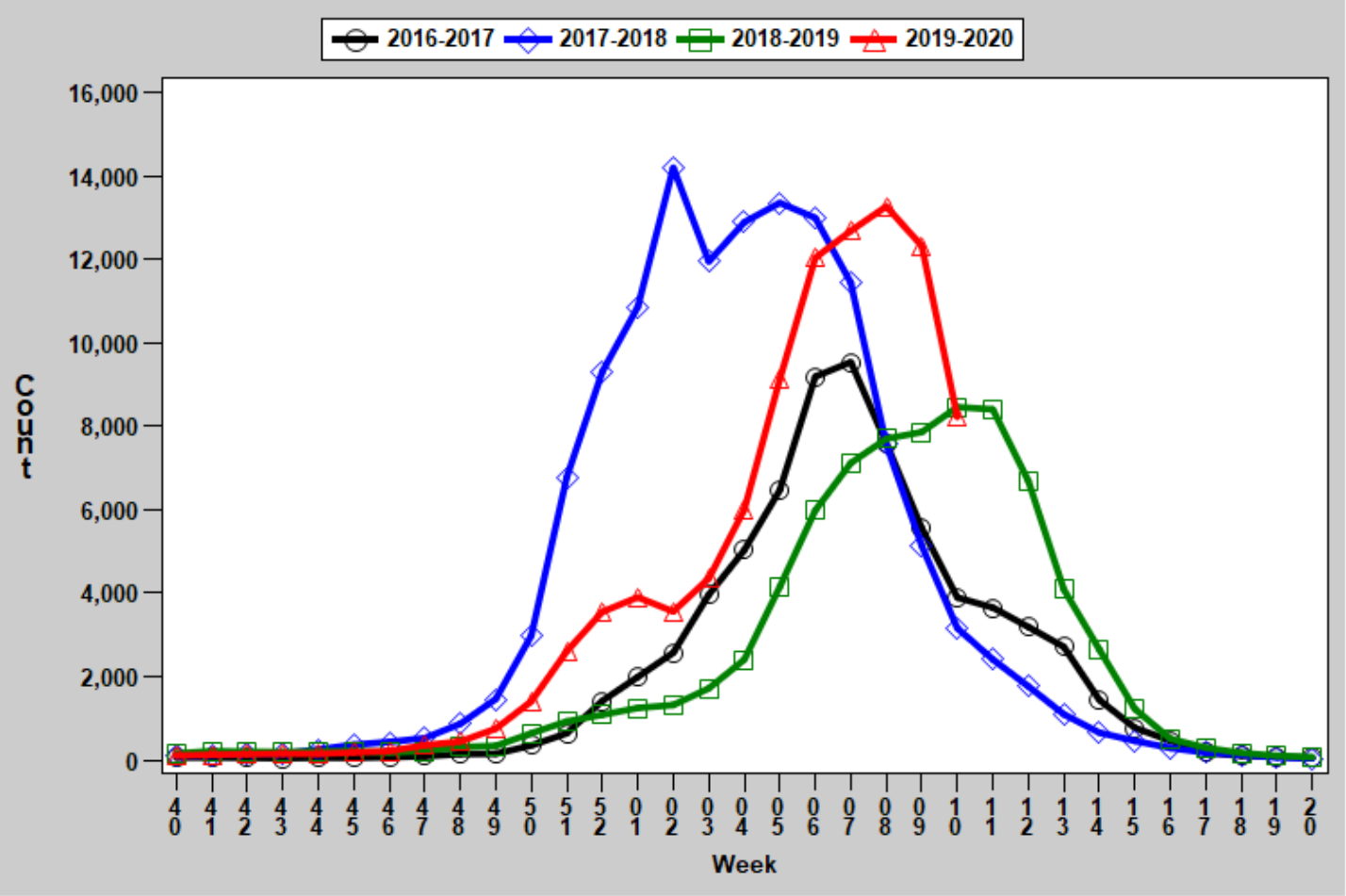
†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
‡Incidence Rate per 100,000 population

Figure 3. Number of Laboratory-positive[†] Influenza Cases and Case Rates by Region, Missouri, CDC Week 10 (March 1, 2020 – March 7, 2020)[*‡]

Region	Week 10 Cases	Week 10 Rate[‡]	2019-2020* Season-to-Date	2019-2020* Season-to-Date Rate[‡]
Central	484	71.49	11,810	1,744.47
Eastern	2,518	111.11	24,875	1,097.67
Northwest	2,072	129.70	30,423	1,904.39
Southeast	1,161	246.13	10,585	2,244.02
Southwest	1,987	185.48	17,915	1,672.27
Total	8,222	135.15	95,608	1,571.55

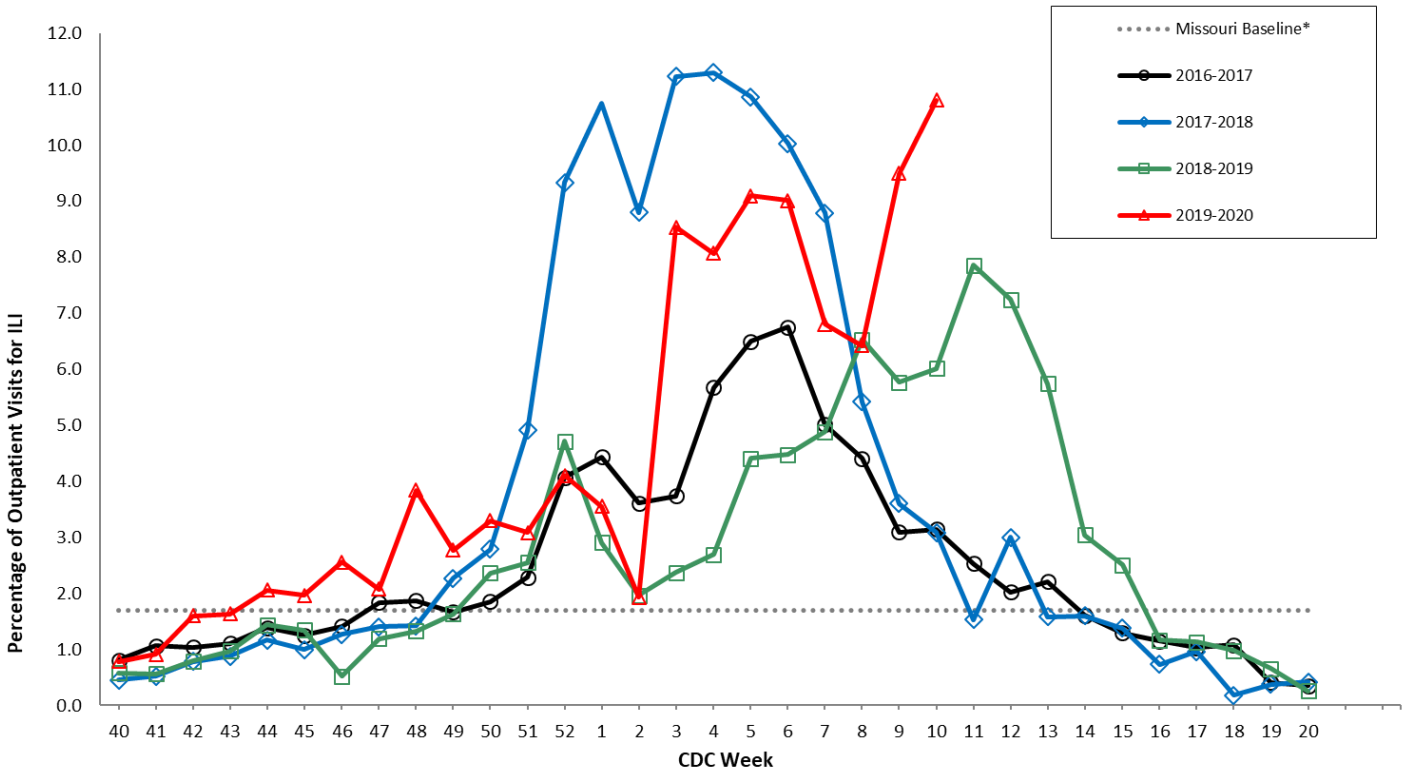
[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
[‡]Incidence Rate per 100,000 population

Figure 4. Number of Laboratory-positive[†] Influenza Cases by CDC Week, Missouri, 2016-2020[*]



[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).Data Source: Missouri Health Information Surveillance System (WebSurv).

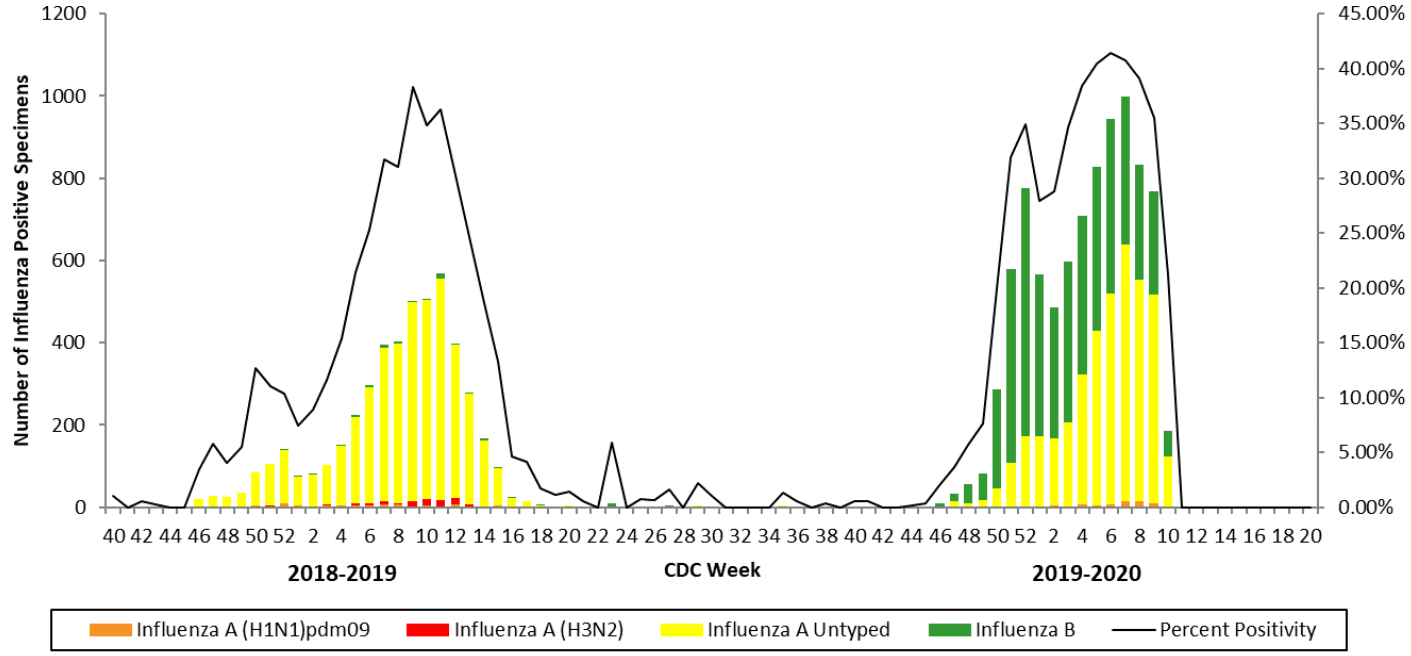
Figure 5. Percentage of Outpatient Visits for Influenza-like Illness (ILI), Missouri Outpatient ILI Surveillance Network (ILINet) 2016-2020*†



*The ILINet Region 7 (MO, IA, KS, NE) baseline is the mean percentage of patient visits for ILI during non-influenza weeks for the previous three seasons, plus two standard deviations. A non-influenza week is defined as periods of two or more consecutive weeks in which each week accounted for less than 2% of the season's total number of specimens that tested positive for influenza. Data Source: U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Centers for Disease Control and Prevention (CDC).

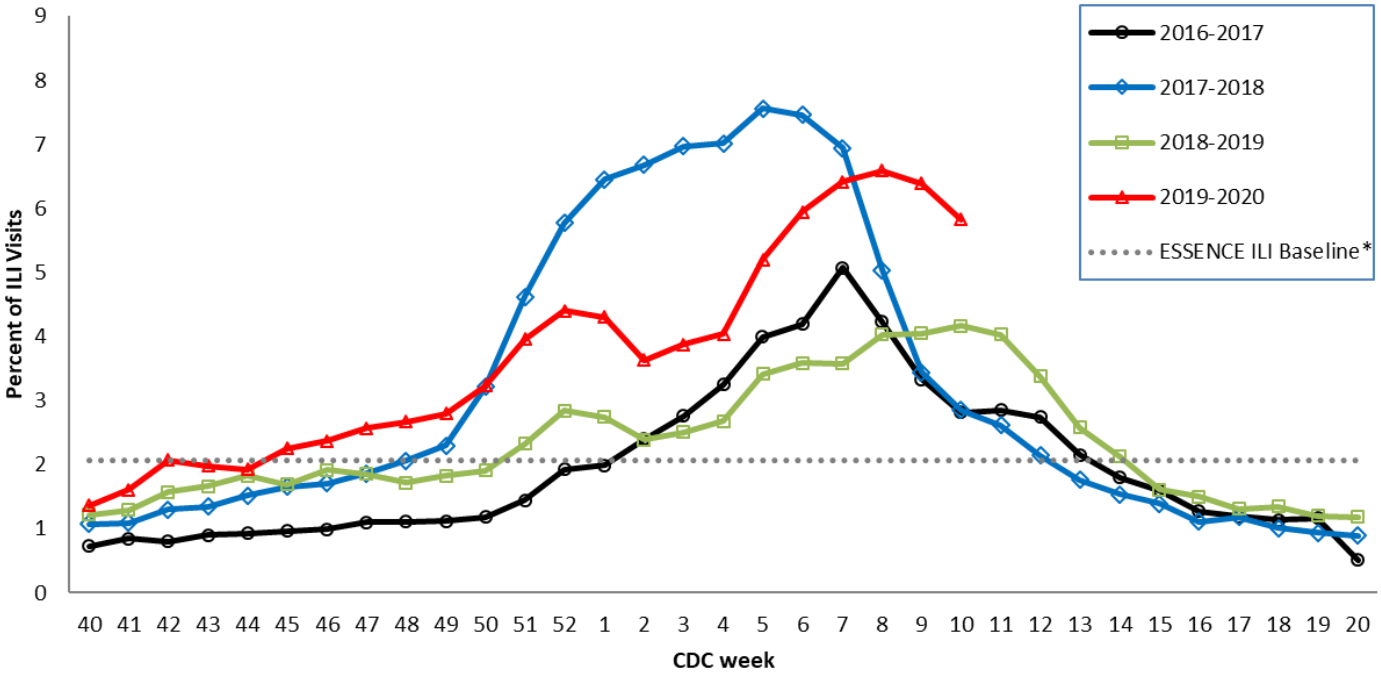
†2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).

Figure 6. Season-to-Date PCR (+) Tests for Influenza in Missouri



Data Source: National Respiratory and Enteric Virus Surveillance System (NREVSS), Centers for Disease Control and Prevention (CDC).
2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).

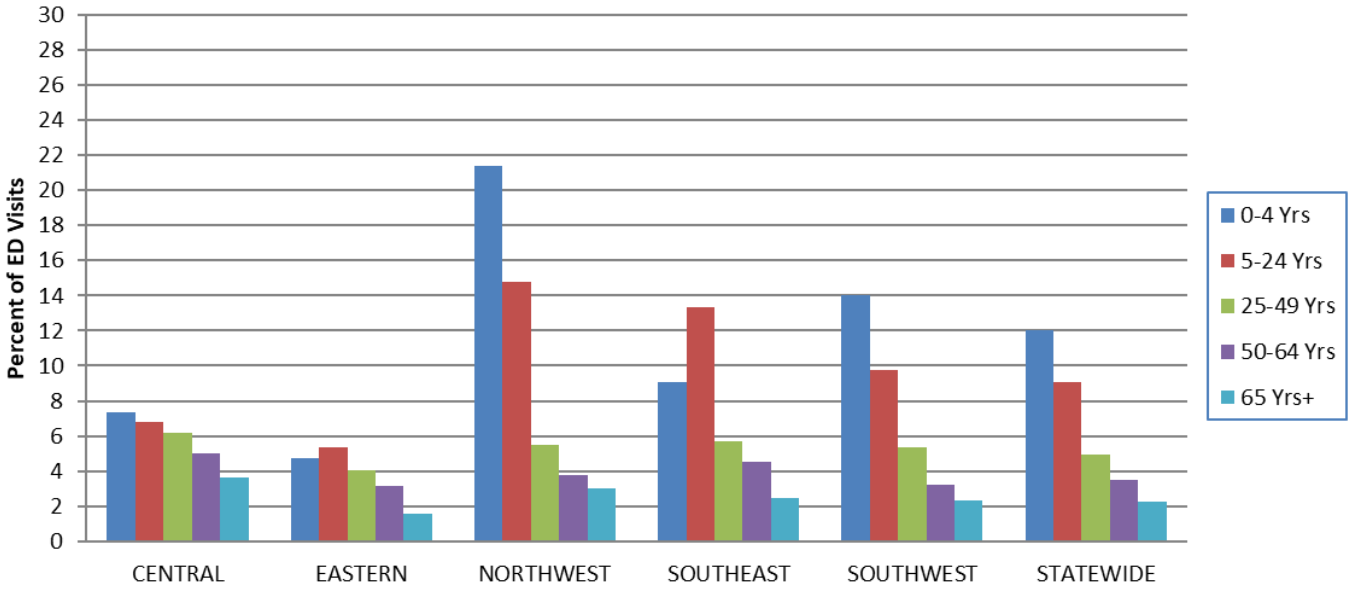
Figure 7. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, 2016-2020 Influenza Seasons*‡



*The ESSENCE ILI Baseline is the mean percent of ILI visits for each week during the previous three years (2016-18) when percentage of ILI visits were less than 2% of total visits, plus two standard deviations. Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.

‡The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 8. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Age Group, Region and Statewide, Week 10, 2020*



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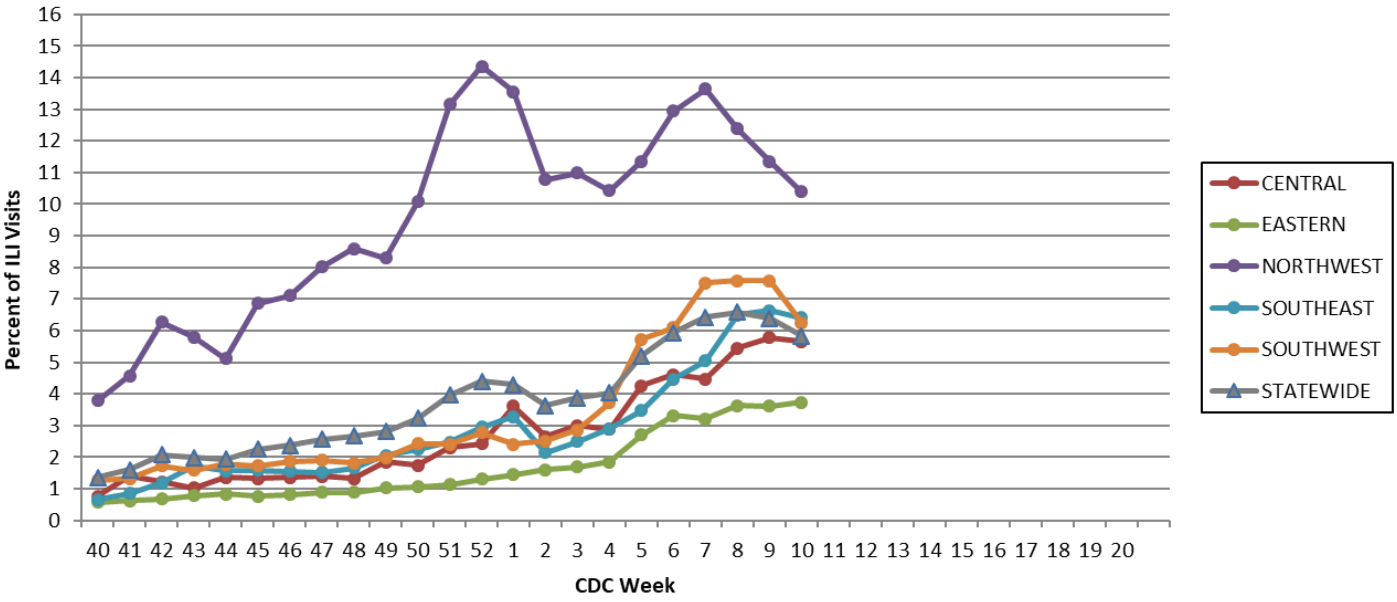

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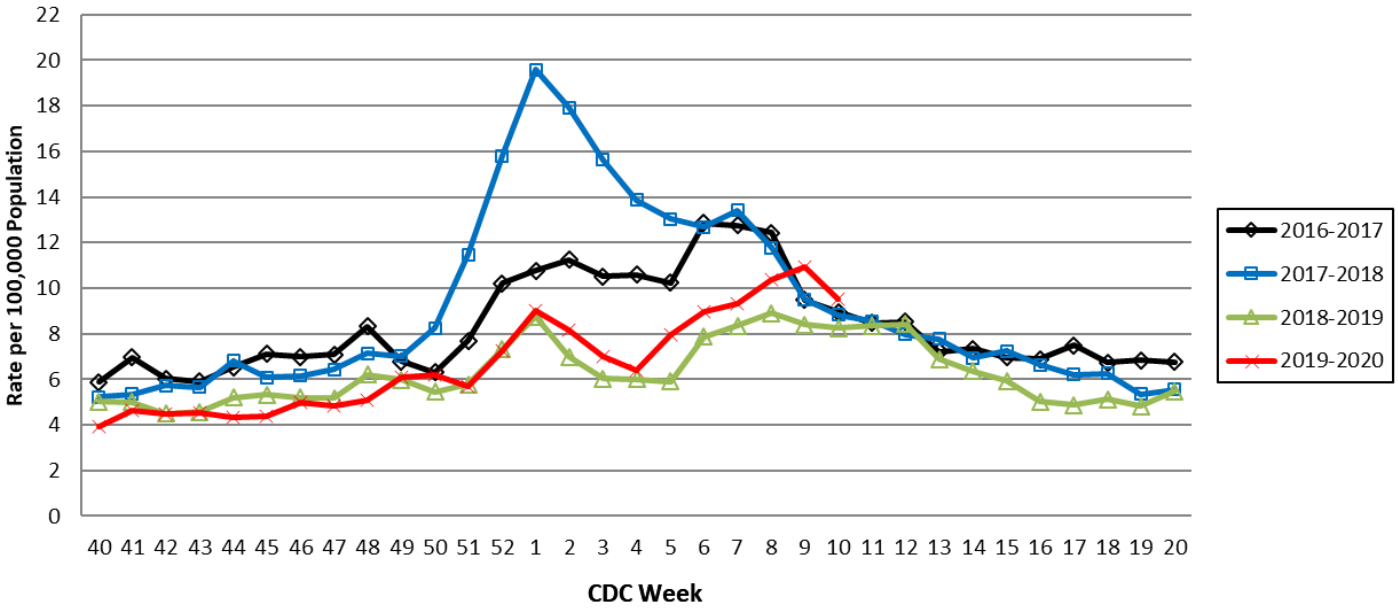
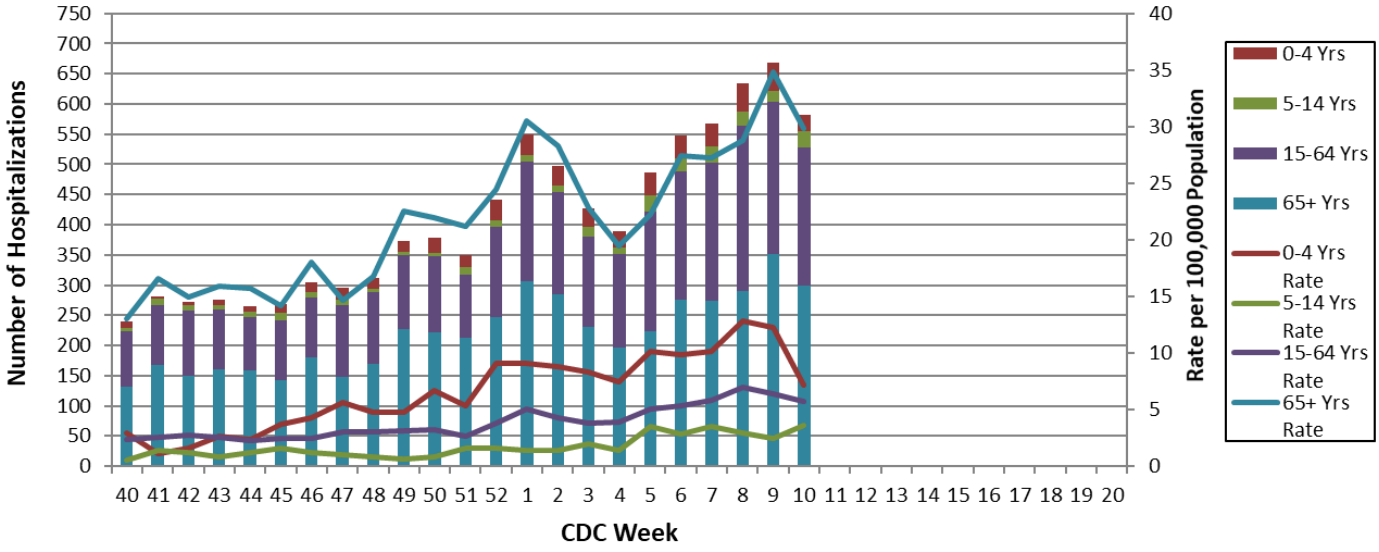
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 10. Weekly Rate of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Missouri Hospitals, 2016-2020 Influenza Seasons



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.
Population data from Missouri Census Data Center 2017 (https://census.missouri.edu).

Figure 11. Number of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Participating Missouri Hospitals, by Age Group, Week 10, 2019-2020 Influenza Season



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.

Additional Influenza Data Sources:

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The National Respiratory and Enteric Virus Surveillance System (NREVSS):
https://www.cdc.gov/surveillance/nrevss/

World Health Organization: International Influenza Surveillance:
http://www.who.int/influenza/surveillance_monitoring/en/

Missouri Weekly Influenza Surveillance Report
2019-2020 Influenza Season[1]

Week 11: March 8, 2020 – March 14, 2020

All data are preliminary and may change as more reports are received.

Summary:

- The estimated influenza activity in Missouri is Widespread[2].

- A total of 4,221 laboratory-positive[3] influenza cases (2,509 influenza A, 1,693 influenza B, and 19 untyped) were reported during Week 11. The season-to-date total of laboratory-positive influenza cases is 102,817 (47.7% influenza A, 51.5% influenza B, and 0.8% untyped). Five laboratory-positive cases of influenza (A H1N1) were reported by the Missouri State Public Health Laboratory (MSPHL) during Week 11. The percentage of respiratory specimens testing positive for influenza in Missouri laboratories reporting to the National Respiratory and Enteric Virus Surveillance System (NREVSS) increased during Week 11 (Figure 6).

- Influenza-like illness (ILI) activity was above baseline for the Missouri Outpatient ILI Surveillance Network (ILINet) and for the hospital emergency room visit chief complaint data reported through ESSENCE. The reported percentage of visits for ILI was 10.61% (Figure 5) and 5.74% (Figure 7) through ILINet and ESSENCE respectively.[4] The ILI data from a small number of sites located in the Northwest Region of the state is currently unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

- A season-to-date total of 67 influenza-associated deaths have been reported in Missouri as of Week 11.[5] During Week 10, 69 deaths involving Pneumonia and Influenza (P&I) were reported to the Bureau of Vital Records, resulting in a season-to-date total of 1,188 P&I associated deaths in Missouri.[6]

- Thirteen influenza outbreaks and seven school closures have been reported in Missouri as of Week 11.

- Seasonal influenza activity as reported by clinical laboratories in the United States remained high but decreased for the fourth week in a row during Week 10. However, influenza-like illness activity increased slightly. National influenza surveillance information is prepared by CDC and is included in the weekly FluView report, which is available online at http://www.cdc.gov/flu/weekly/fluactivitysurv.htm.

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[1]The 2019-2020 influenza season begins CDC Week 40 (week ending October 5, 2019) and ends CDC Week 39 (week ending September 26, 2020).

[2]Widespread is defined as: Outbreaks of influenza or increases in ILI cases and recent laboratory-confirmed influenza in at least half the regions of the state with recent laboratory evidence of influenza in the state.

[3]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.

[4]Influenza-like illness (ILI) is defined by ILINet as fever (temperature of 100°F [37.8°C] or greater) and a cough and/or a sore throat without a known cause other than influenza. ILI is defined by ESSENCE as Emergency Department chief complaints for Influenza or (FeverPlus and (Cough or SoreThroat) and not NonILIFevers).

[5]All influenza-associated deaths became reportable in Missouri in 2016. These reports are verified by local public health agencies and DHSS.

[6]The P&I data are obtained from vital statistics data using ICD-10 codes, which are available one week later. The P&I data for the CDC Week provided is the most current data available.

Surveillance Data:

Interactive Maps

The jurisdiction-specific influenza data are provided though interactive maps available at http://bit.ly/moflu19. *Click on the jurisdiction to view the influenza data specific to that jurisdiction.*

- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, CDC Week 11**
- **Reported Week-specific Rate per 100,000 Population, CDC Week 11**
- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, Season-to-Date**
- **Reported Rate per 100,000 Population, Season-to-Date**

Data Figures

Figure 1. Number of Laboratory-positive† Influenza Cases by Influenza Type, Missouri, CDC Week 11 (March 8, 2020 – March 14, 2020)*

Influenza Type	Week 9	Week 10	Week 11	2019-2020* Season-to-Date
Influenza A	7,099	6,267	2,509	49,082
Influenza B	5,512	4,034	1,693	52,886
Influenza Unknown Or Untyped	38	30	19	849
Total	12,649	10,331	4,221	102,817

†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv).

Figure 2. Number of Laboratory-positive† Influenza Cases and Case Rates by Age Group, Missouri, CDC Week 11 (March 8, 2020 – March 14, 2020)*‡

Age Group	Week 11 Cases	Week 11 Rate‡	2019-2020* Season-to-Date	2019-2020* Season-to-Date Rate‡
00-04	697	186.18	17,613	4,704.83
05-24	1,649	102.77	45,556	2,839.24
25-49	987	51.58	24,314	1,270.66
50-64	497	40.20	9,572	774.20
65+	391	40.95	5,761	603.30
Total	4,221	69.38	102,817	1,690.05

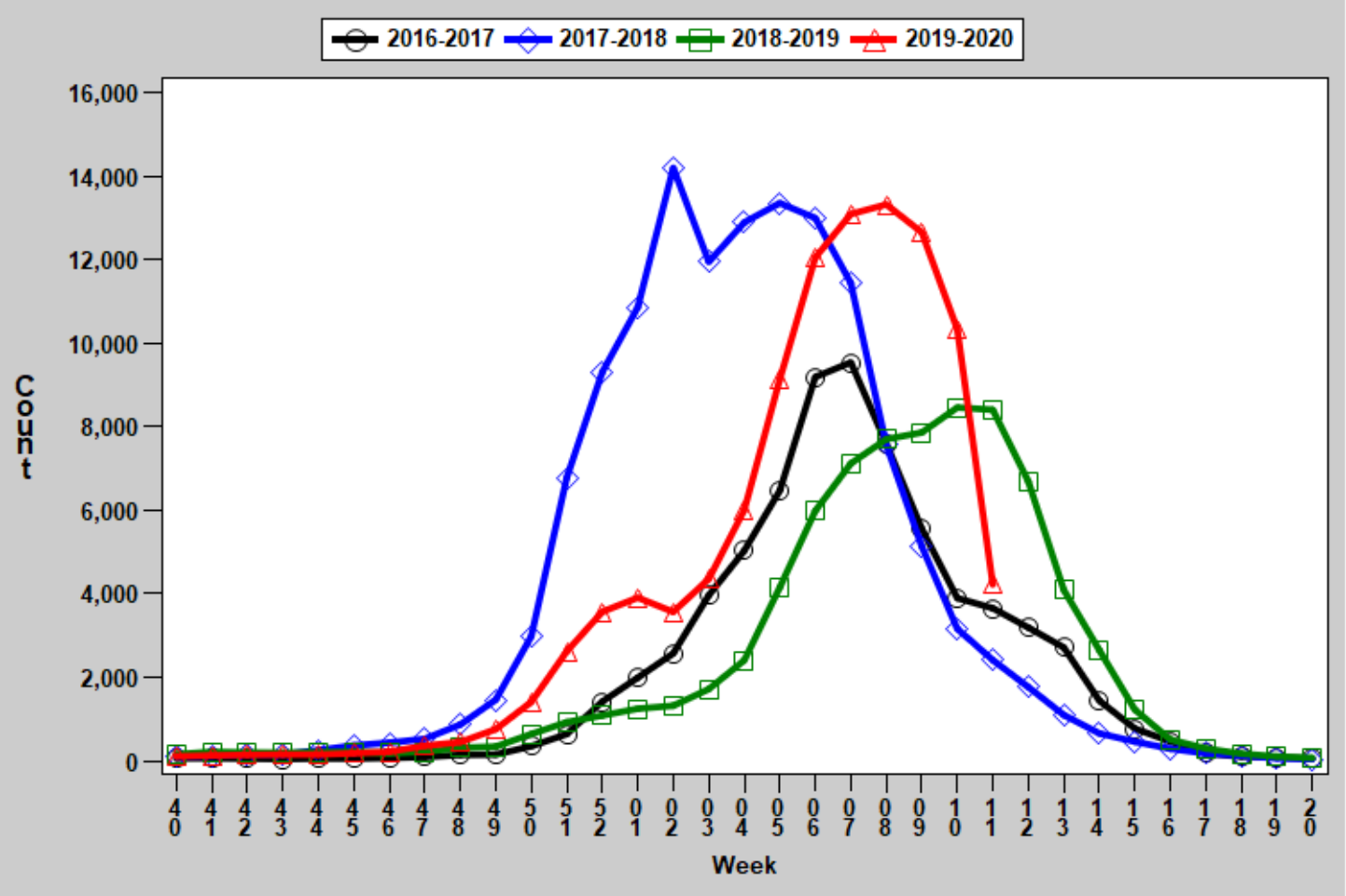
†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
‡Incidence Rate per 100,000 population

Figure 3. Number of Laboratory-positive[†] Influenza Cases and Case Rates by Region, Missouri, CDC Week 11 (March 8, 2020 – March 14, 2020)[*‡]

Region	Week 11 Cases	Week 11 Rate[‡]	2019-2020* Season-to-Date	2019-2020* Season-to-Date Rate[‡]
Central	367	54.21	13,163	1,944.32
Eastern	1,875	82.74	27,300	1,204.68
Northwest	863	54.02	32,216	2,016.62
Southeast	601	127.41	11,531	2,444.57
Southwest	515	48.07	18,607	1,736.86
Total	4,221	69.38	102,817	1,690.05

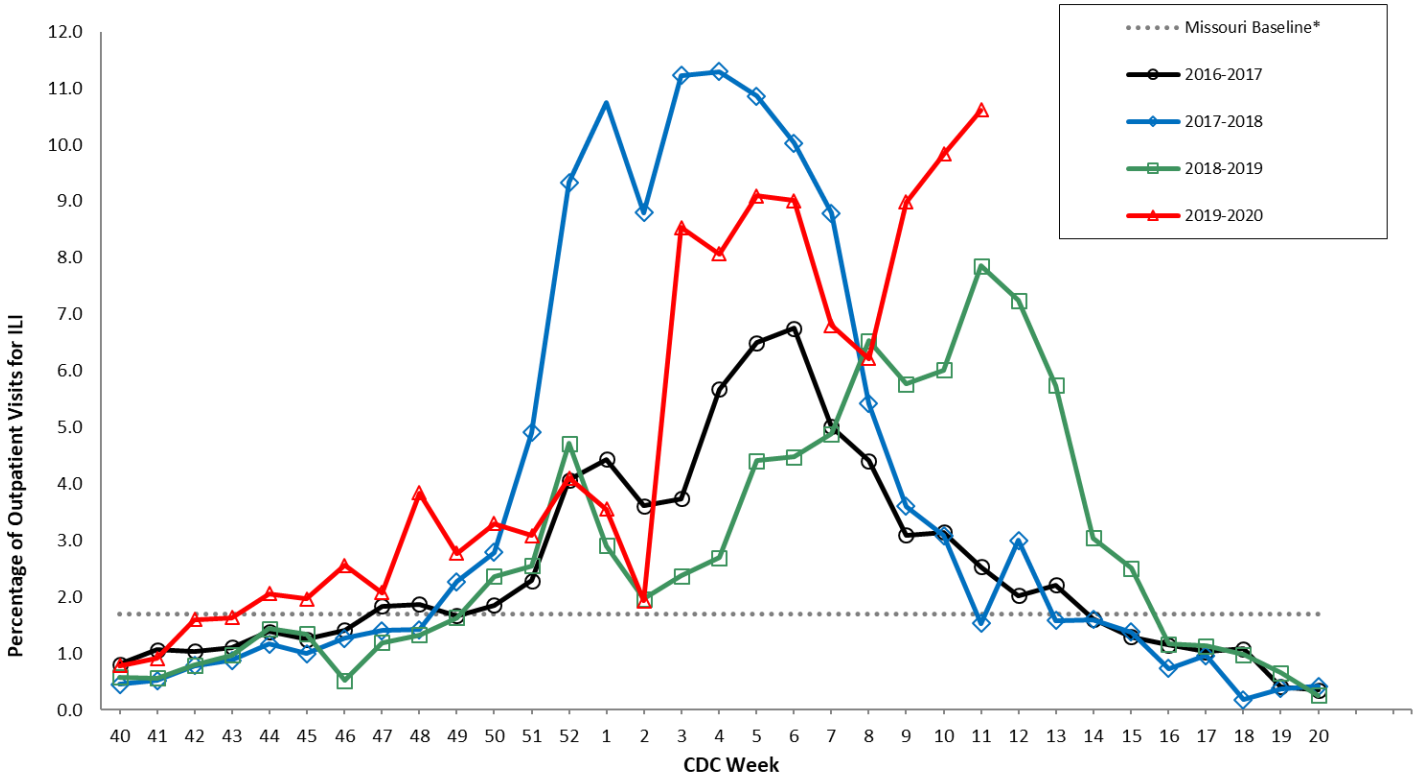
[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
[‡]Incidence Rate per 100,000 population

Figure 4. Number of Laboratory-positive[†] Influenza Cases by CDC Week, Missouri, 2016-2020[*]



[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).Data Source: Missouri Health Information Surveillance System (WebSurv).

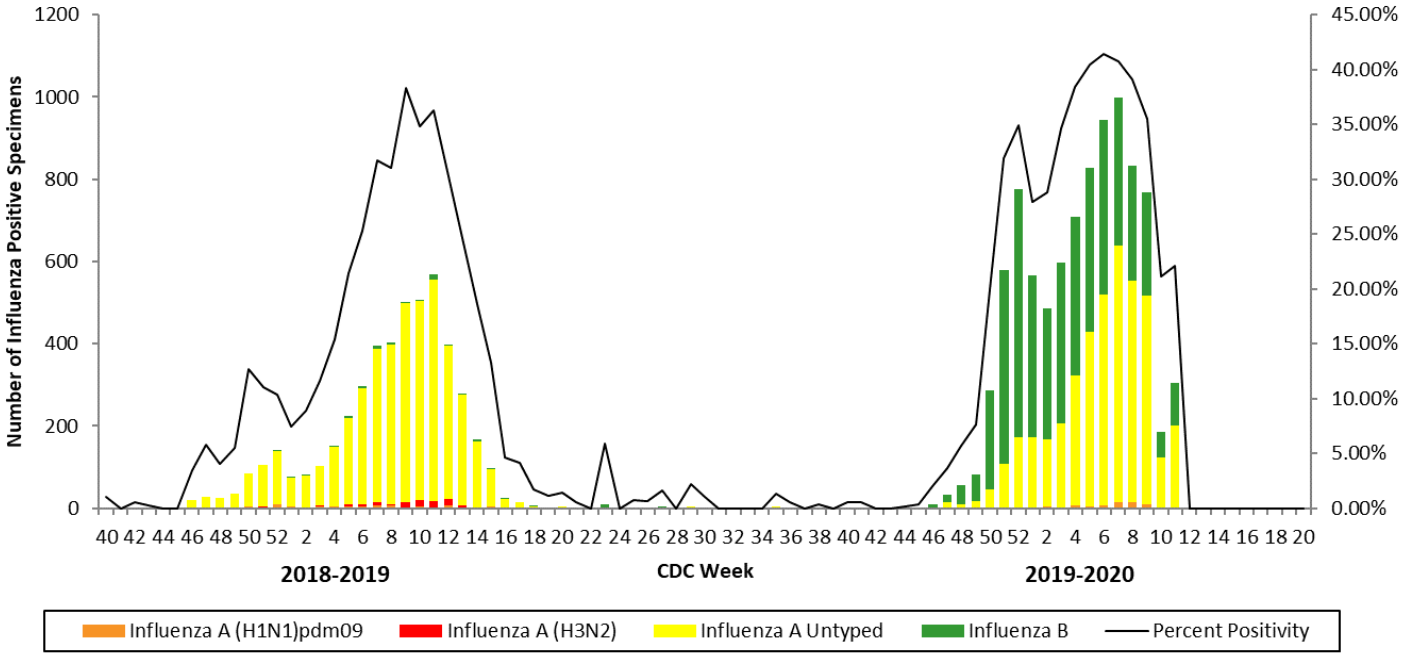
Figure 5. Percentage of Outpatient Visits for Influenza-like Illness (ILI), Missouri Outpatient ILI Surveillance Network (ILINet) 2016-2020*†



*The ILINet Region 7 (MO, IA, KS, NE) baseline is the mean percentage of patient visits for ILI during non-influenza weeks for the previous three seasons, plus two standard deviations. A non-influenza week is defined as periods of two or more consecutive weeks in which each week accounted for less than 2% of the season's total number of specimens that tested positive for influenza. Data Source: U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Centers for Disease Control and Prevention (CDC).

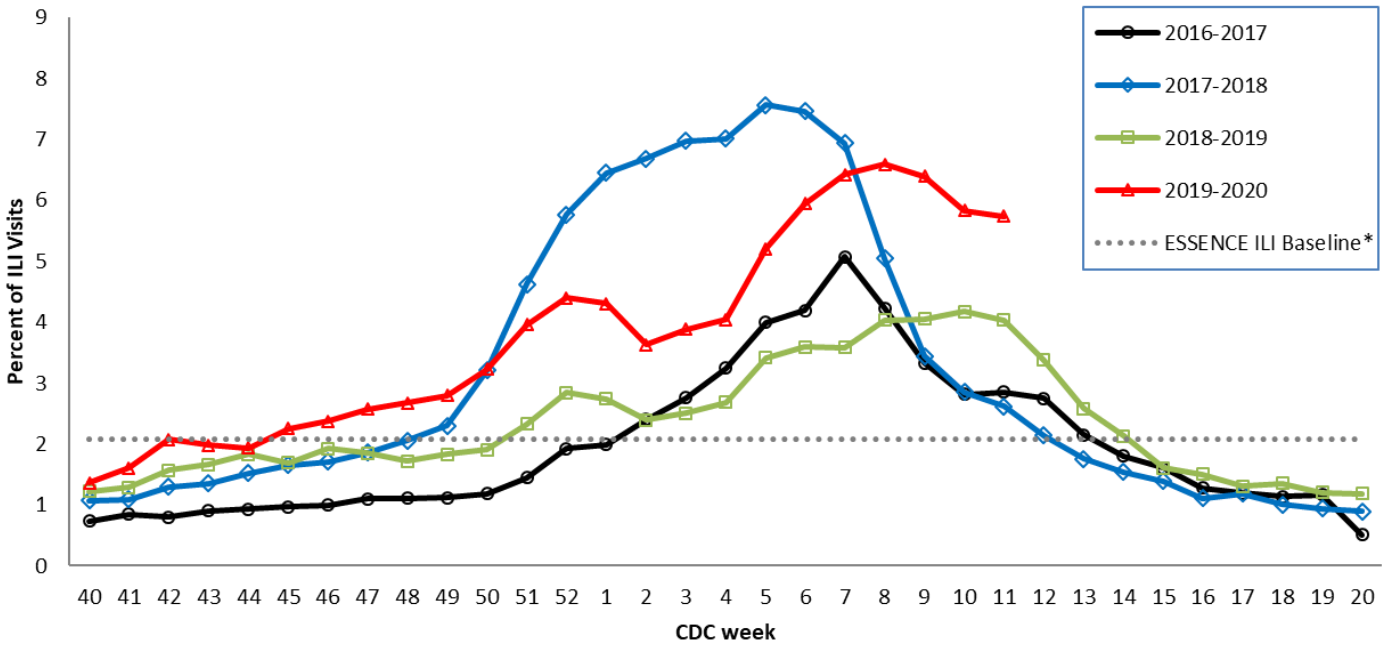
†2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).

Figure 6. Season-to-Date PCR (+) Tests for Influenza in Missouri



Data Source: National Respiratory and Enteric Virus Surveillance System (NREVSS), Centers for Disease Control and Prevention (CDC). 2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).

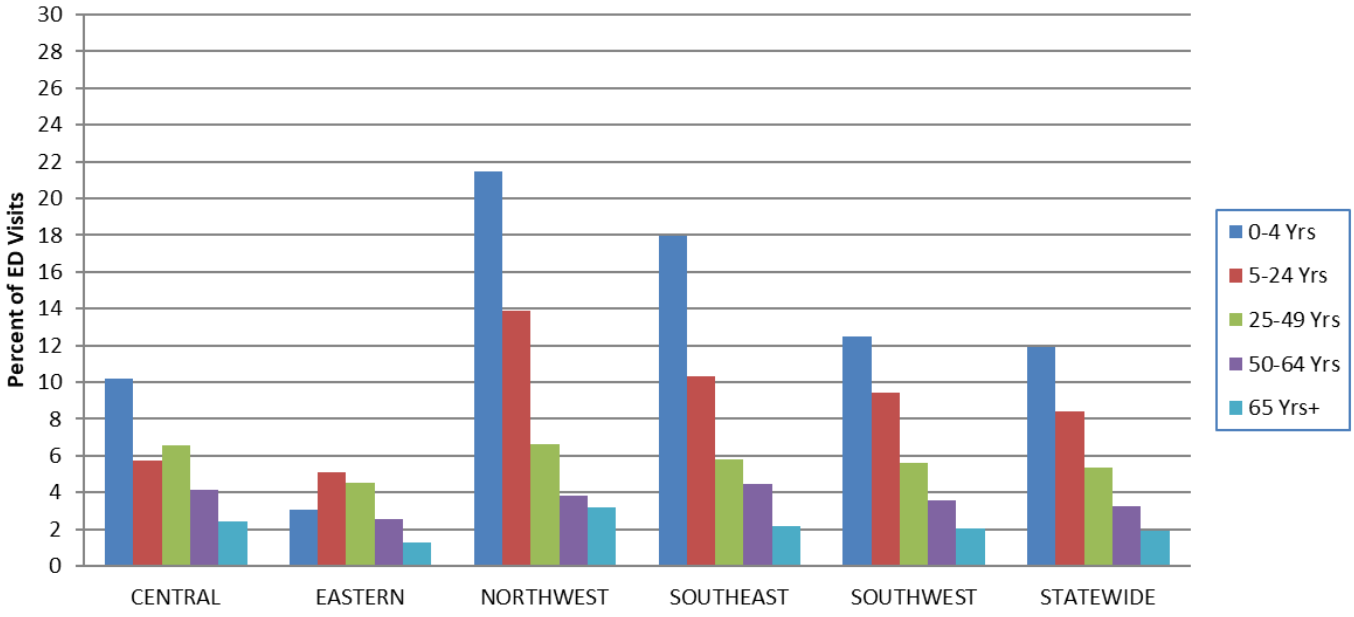
Figure 7. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, 2016-2020 Influenza Seasons*‡



*The ESSENCE ILI Baseline is the mean percent of ILI visits for each week during the previous three years (2016-18) when percentage of ILI visits were less than 2% of total visits, plus two standard deviations. Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.

‡The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

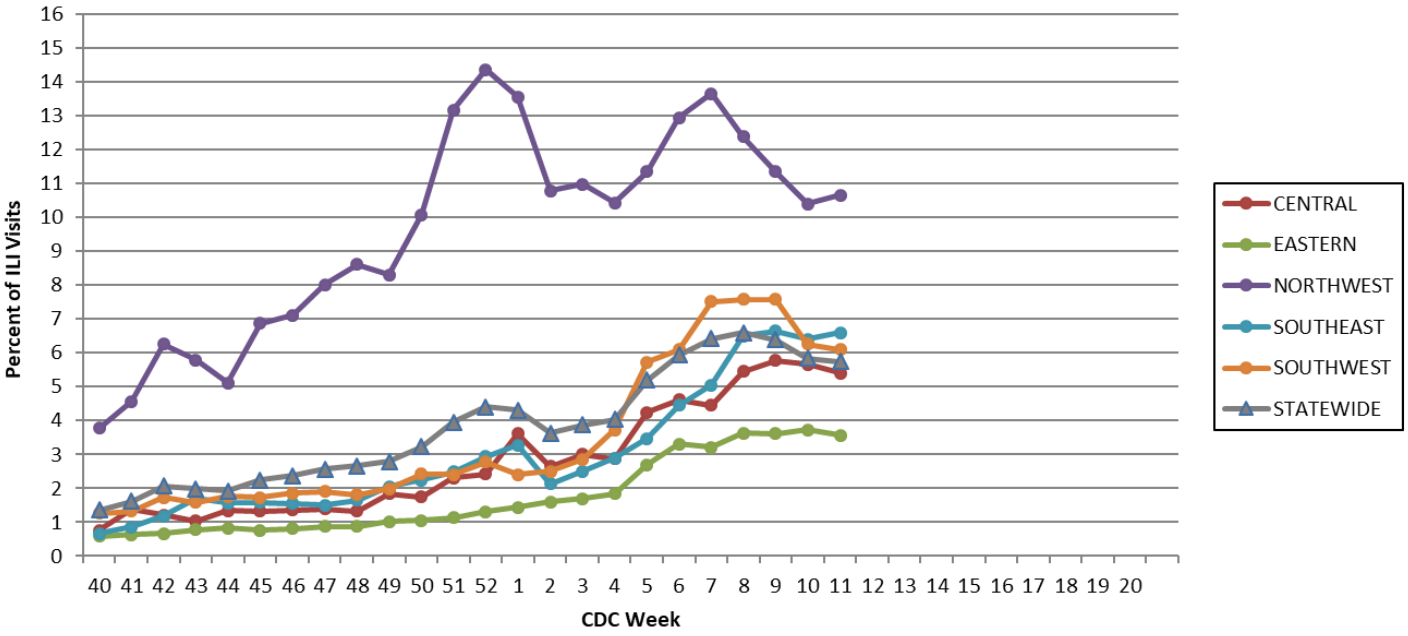
Figure 8. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Age Group, Region and Statewide, Week 11, 2020*



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.

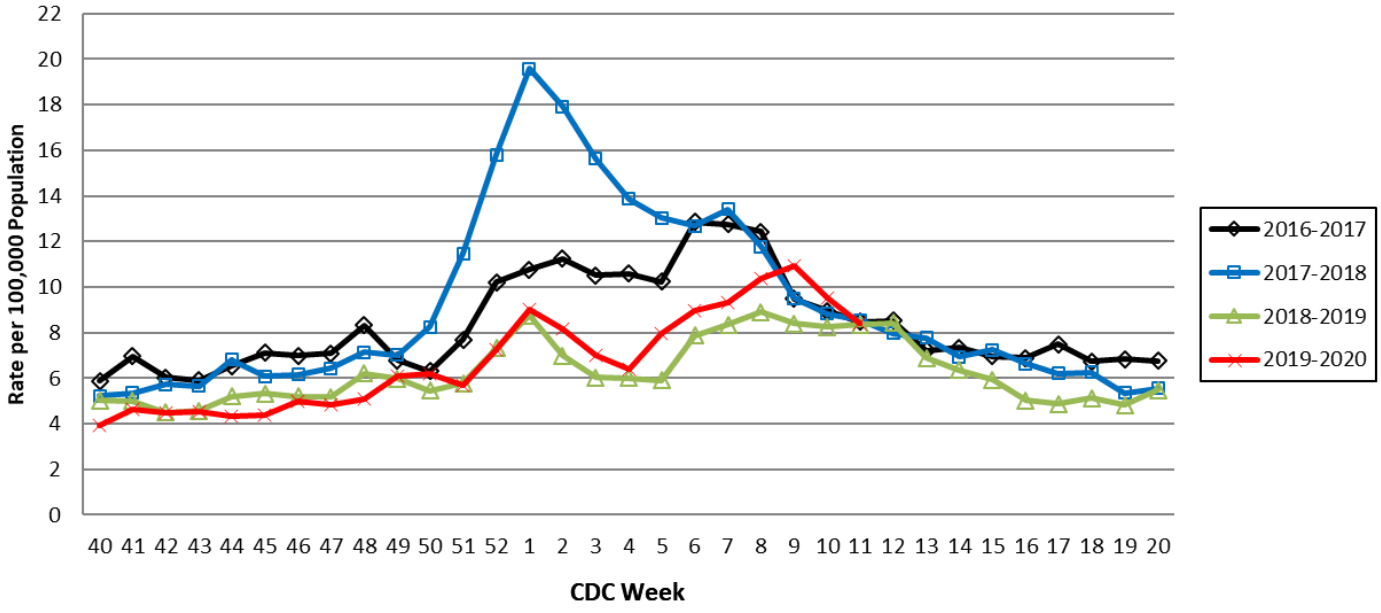
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 9. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Region and Statewide, 2019-2020 Influenza Season*



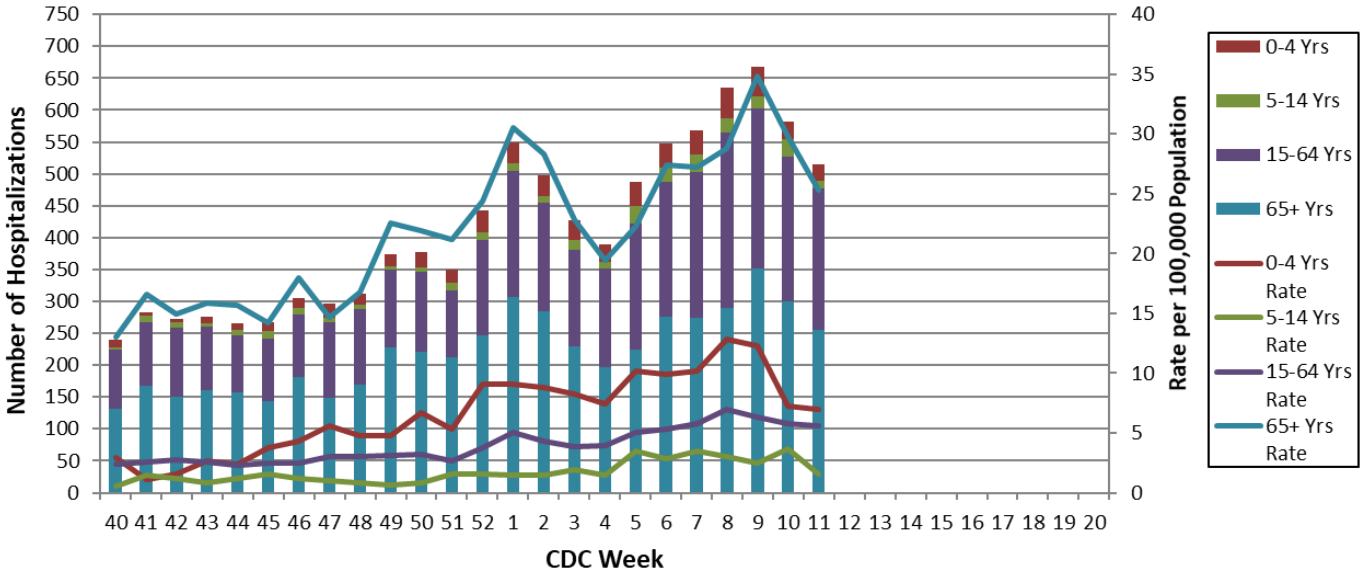
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 10. Weekly Rate of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Missouri Hospitals, 2016-2020 Influenza Seasons



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.
Population data from Missouri Census Data Center 2017 (https://census.missouri.edu).

Figure 11. Number of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Participating Missouri Hospitals, by Age Group, Week 11, 2019-2020 Influenza Season



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.

Additional Influenza Data Sources:

Centers for Disease Control and Prevention: National Influenza Surveillance (FluView):
http://www.cdc.gov/flu/weekly/fluactivitysurv.htm

The National Respiratory and Enteric Virus Surveillance System (NREVSS):
https://www.cdc.gov/surveillance/nrevss/

World Health Organization: International Influenza Surveillance:
http://www.who.int/influenza/surveillance_monitoring/en/

Missouri Weekly Influenza Surveillance Report 2019-2020 Influenza Season[1]

Week 12: March 15, 2020 – March 21, 2020

All data are preliminary and may change as more reports are received.

Summary:

- The estimated influenza activity in Missouri is Widespread[2].

- A total of 2,803 laboratory-positive[3] influenza cases (1,547 influenza A, 1,251 influenza B, and 5 untyped) were reported during Week 12. The season-to-date total of laboratory-positive influenza cases is 107,923 (48.1% influenza A, 51.1% influenza B, and 0.8% untyped). The percentage of respiratory specimens testing positive for influenza in Missouri laboratories reporting to the National Respiratory and Enteric Virus Surveillance System (NREVSS) decreased during Week 12 (Figure 6). Influenza test results from the Missouri State Public Health Laboratory (MSPHL) are currently not available. The MSPHL has temporarily suspended routine influenza testing in order to divert available resources to COVID-19 testing.

- Influenza-like illness (ILI) activity was above baseline for the Missouri Outpatient ILI Surveillance Network (ILINet) and for the hospital emergency room visit chief complaint data reported through ESSENCE. The reported percentage of visits for ILI was 6.32% (Figure 5) and 5.81% (Figure 7) through ILINet and ESSENCE respectively.[4] The ILI data from a small number of sites located in the Northwest Region of the state is currently unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

- A season-to-date total of 71 influenza-associated deaths have been reported in Missouri as of Week 12.[5] During Week 11, 73 deaths involving Pneumonia and Influenza (P&I) were reported to the Bureau of Vital Records, resulting in a season-to-date total of 1,261 P&I associated deaths in Missouri.[6]

- Thirteen influenza outbreaks and seven school closures have been reported in Missouri as of Week 12.

- Seasonal influenza activity as reported by clinical laboratories in the United States continued to decrease during Week 11. However, influenza-like illness activity increased. National influenza surveillance information is prepared by CDC and is included in the weekly FluView report, which is available online at http://www.cdc.gov/flu/weekly/fluactivitysurv.htm.

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[1]The 2019-2020 influenza season begins CDC Week 40 (week ending October 5, 2019) and ends CDC Week 39 (week ending September 26, 2020).

[2]Widespread is defined as: Outbreaks of influenza or increases in ILI cases and recent laboratory-confirmed influenza in at least half the regions of the state with recent laboratory evidence of influenza in the state.

[3]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.

[4]Influenza-like illness (ILI) is defined by ILINet as fever (temperature of 100°F [37.8°C] or greater) and a cough and/or a sore throat without a known cause other than influenza. ILI is defined by ESSENCE as Emergency Department chief complaints for Influenza or (FeverPlus and (Cough or SoreThroat) and not NonILIFevers).

[5]All influenza-associated deaths became reportable in Missouri in 2016. These reports are verified by local public health agencies and DHSS.

[6]The P&I data are obtained from vital statistics data using ICD-10 codes, which are available one week later. The P&I data for the CDC Week provided is the most current data available.

Surveillance Data:

Interactive Maps

The jurisdiction-specific influenza data are provided though interactive maps available at http://bit.ly/moflu19. *Click on the jurisdiction to view the influenza data specific to that jurisdiction.*

- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, CDC Week 12**
- **Reported Week-specific Rate per 100,000 Population, CDC Week 12**
- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, Season-to-Date**
- **Reported Rate per 100,000 Population, Season-to-Date**

Data Figures

Figure 1. Number of Laboratory-positive† Influenza Cases by Influenza Type, Missouri, CDC Week 12 (March 15, 2020 – March 21, 2020)*

Influenza Type	Week 10	Week 11	Week 12	2019-2020* Season-to-Date
Influenza A	6,391	3,584	1,547	51,959
Influenza B	4,184	2,362	1,251	55,109
Influenza Unknown Or Untyped	30	20	5	855
Total	10,605	5,966	2,803	107,923

†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv).

Figure 2. Number of Laboratory-positive† Influenza Cases and Case Rates by Age Group, Missouri, CDC Week 12 (March 15, 2020 – March 21, 2020)*‡

Age Group	Week 12 Cases	Week 12 Rate‡	2019-2020* Season-to-Date	2019-2020* Season-to-Date Rate‡
00-04	481	128.49	18,567	4,959.66
05-24	1,103	68.74	47,514	2,961.27
25-49	653	34.13	25,492	1,332.22
50-64	299	24.18	10,134	819.65
65+	267	27.96	6,215	650.84
Total	2,803	46.07	107,923	1,773.98

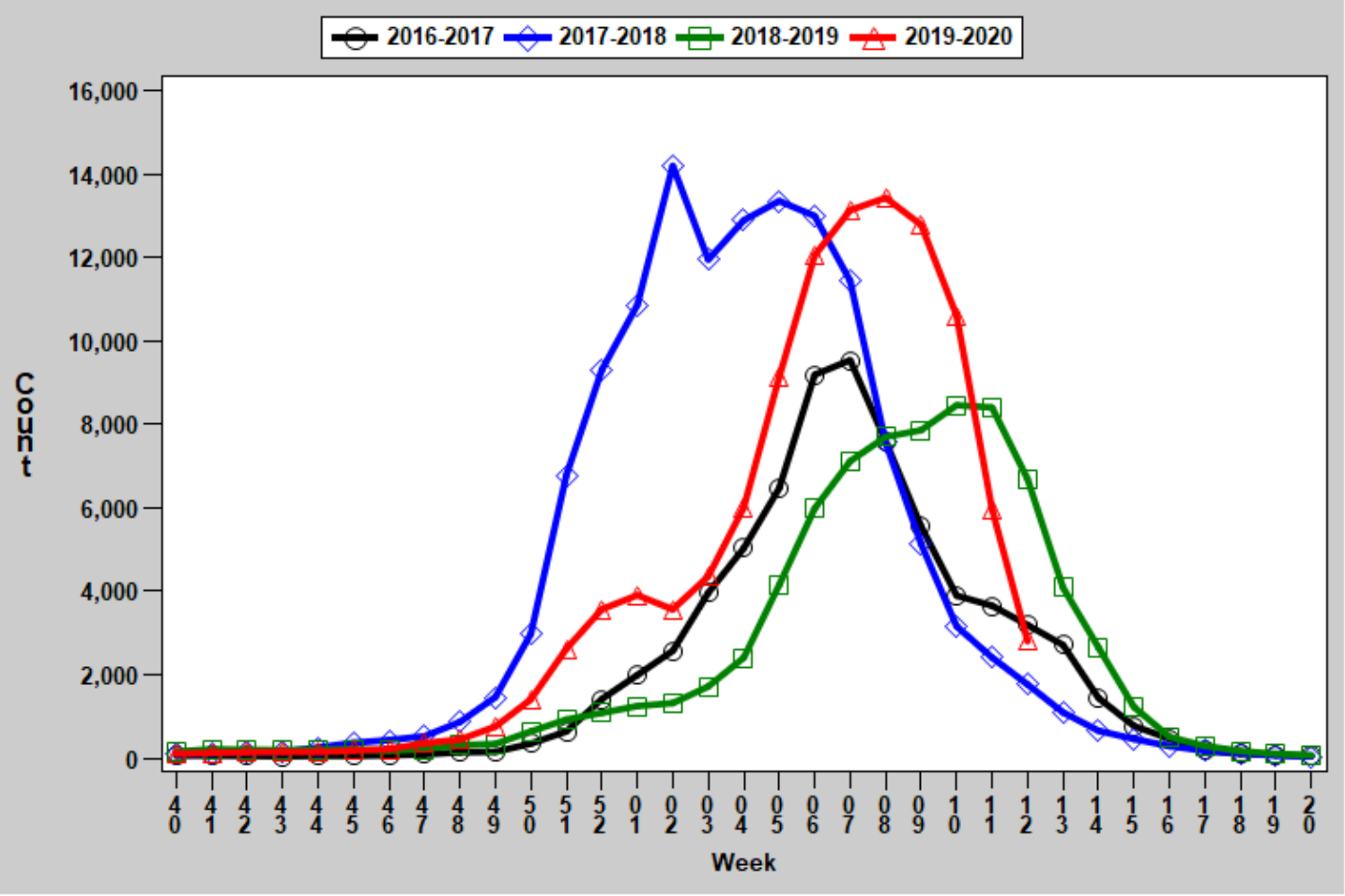
†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
‡Incidence Rate per 100,000 population

Figure 3. Number of Laboratory-positive† Influenza Cases and Case Rates by Region, Missouri, CDC Week 12 (March 15, 2020 – March 21, 2020)*‡

Region	Week 12 Cases	Week 12 Rate‡	2019-2020* Season-to-Date	2019-2020* Season-to-Date Rate‡
Central	188	27.77	13,791	2,037.08
Eastern	1,578	69.63	29,475	1,300.66
Northwest	284	17.78	32,648	2,043.67
Southeast	445	94.34	12,198	2,585.97
Southwest	308	28.75	19,811	1,849.25
Total	2,803	46.07	107,923	1,773.98

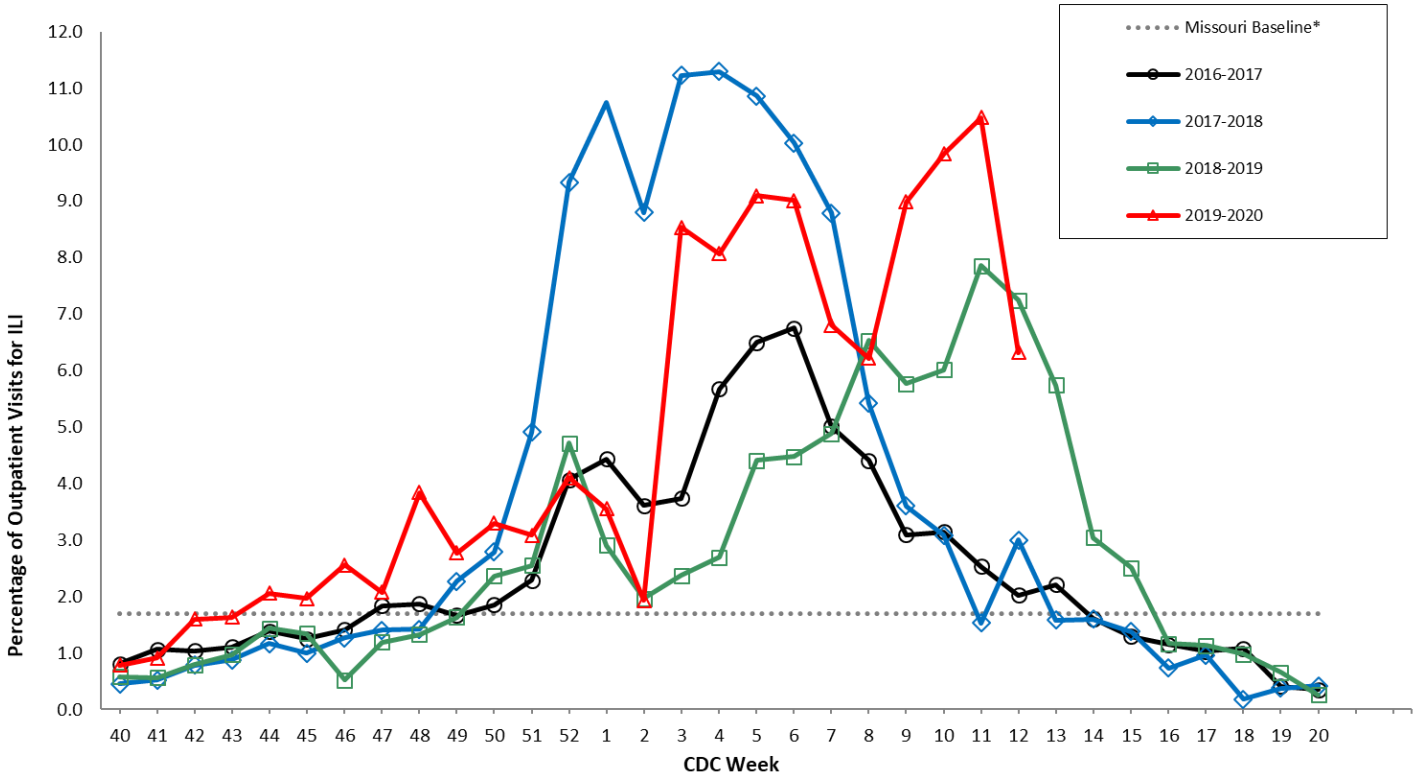
†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
‡Incidence Rate per 100,000 population

Figure 4. Number of Laboratory-positive† Influenza Cases by CDC Week, Missouri, 2016-2020*



†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).Data Source: Missouri Health Information Surveillance System (WebSurv).

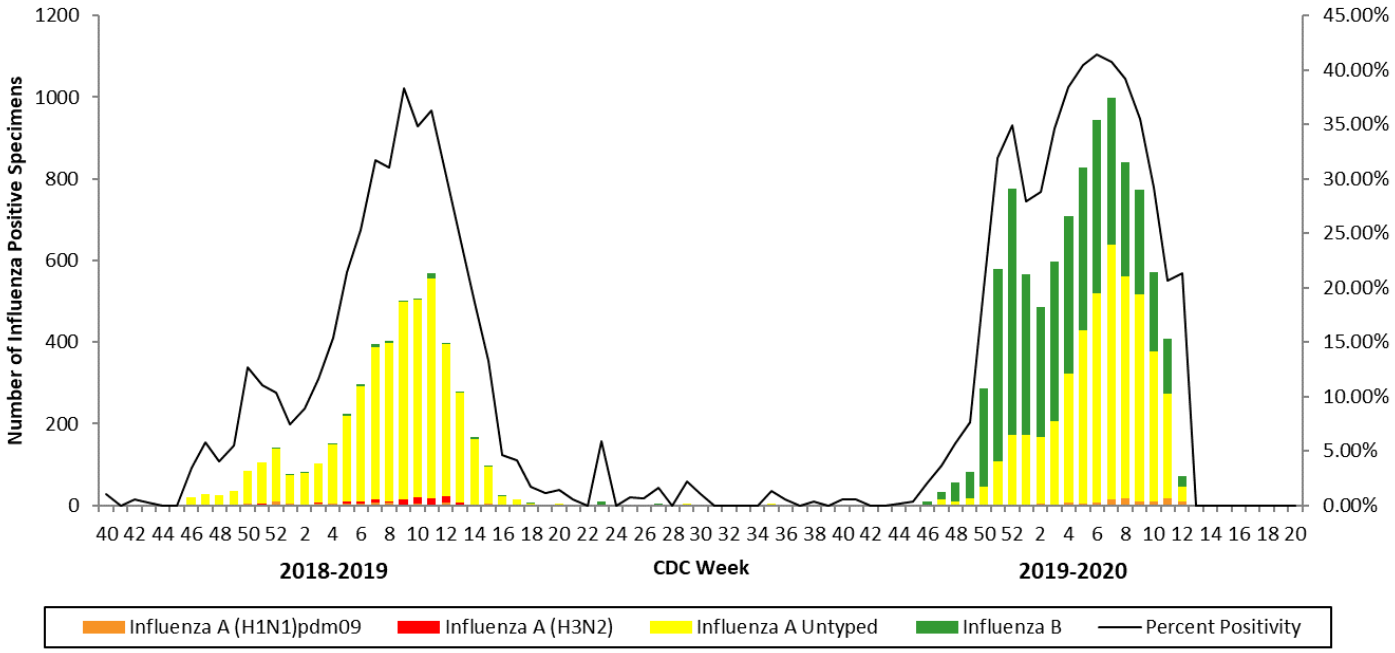
Figure 5. Percentage of Outpatient Visits for Influenza-like Illness (ILI), Missouri Outpatient ILI Surveillance Network (ILINet) 2016-2020*†



*The ILINet Region 7 (MO, IA, KS, NE) baseline is the mean percentage of patient visits for ILI during non-influenza weeks for the previous three seasons, plus two standard deviations. A non-influenza week is defined as periods of two or more consecutive weeks in which each week accounted for less than 2% of the season's total number of specimens that tested positive for influenza. Data Source: U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Centers for Disease Control and Prevention (CDC).

†2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).

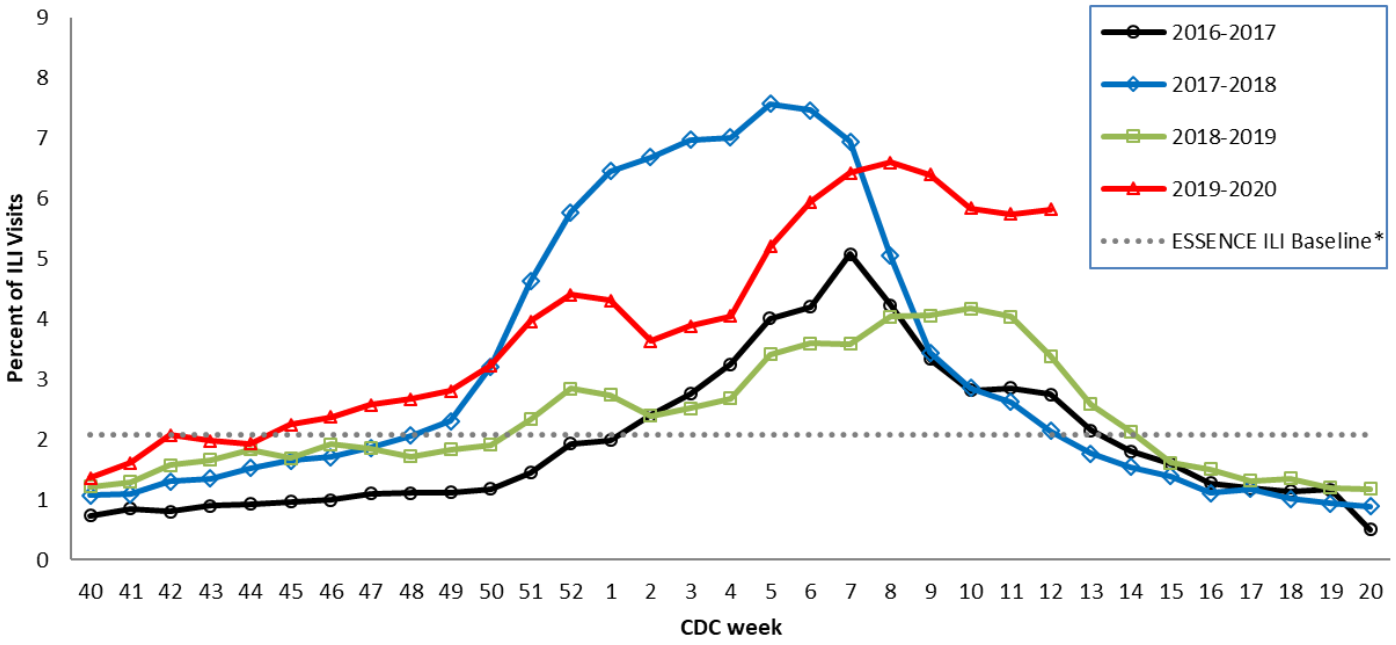
Figure 6. Season-to-Date PCR (+) Tests for Influenza in Missouri



Data Source: National Respiratory and Enteric Virus Surveillance System (NREVSS), Centers for Disease Control and Prevention (CDC).

2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).

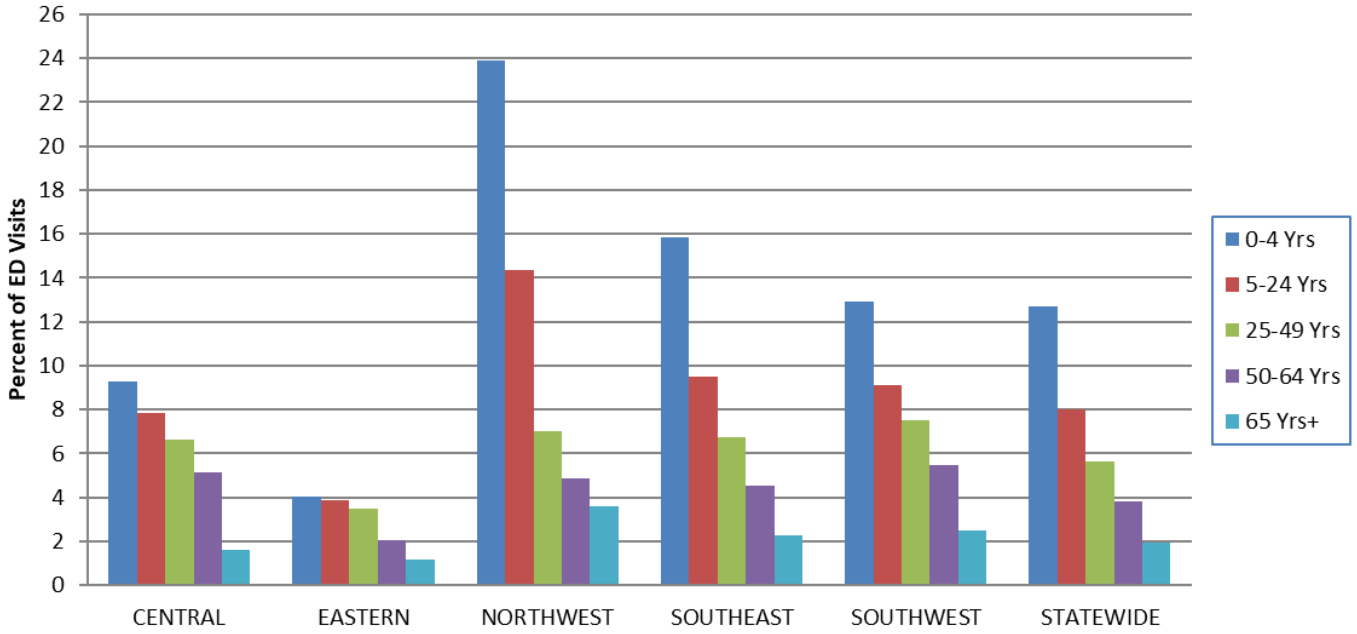
Figure 7. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, 2016-2020 Influenza Seasons*‡



*The ESSENCE ILI Baseline is the mean percent of ILI visits for each week during the previous three years (2016-18) when percentage of ILI visits were less than 2% of total visits, plus two standard deviations. Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.

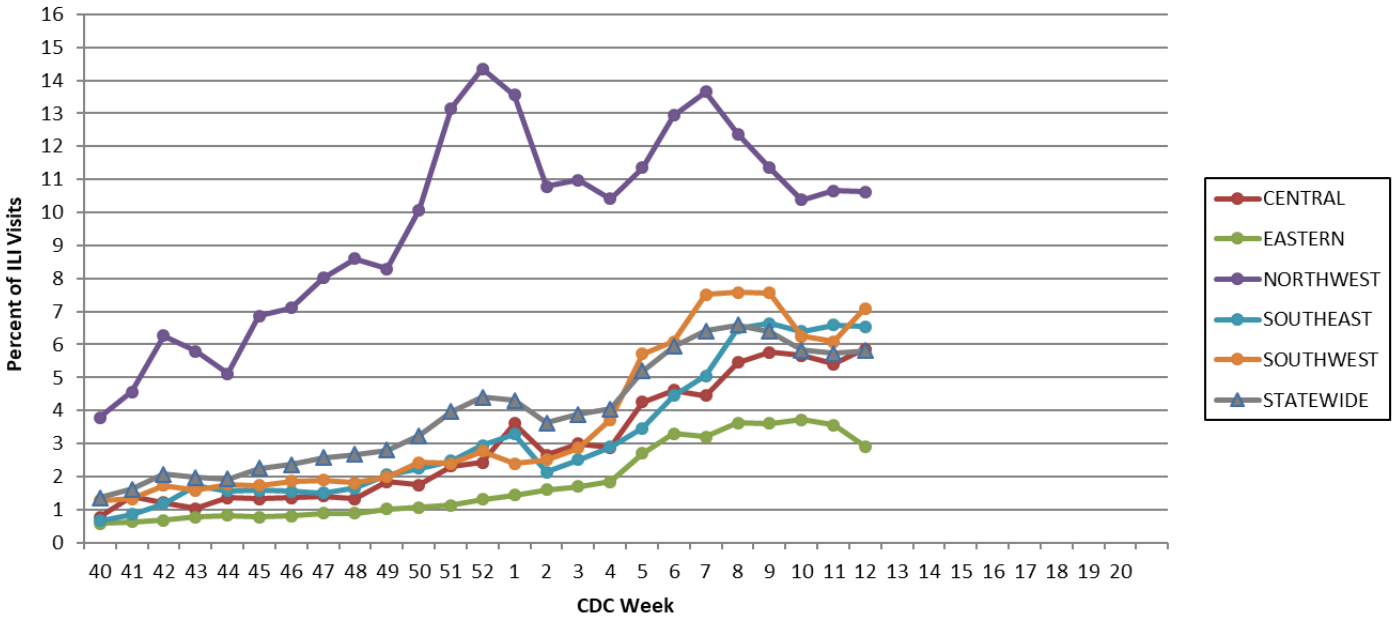
‡The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 8. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Age Group, Region and Statewide, Week 12, 2020*



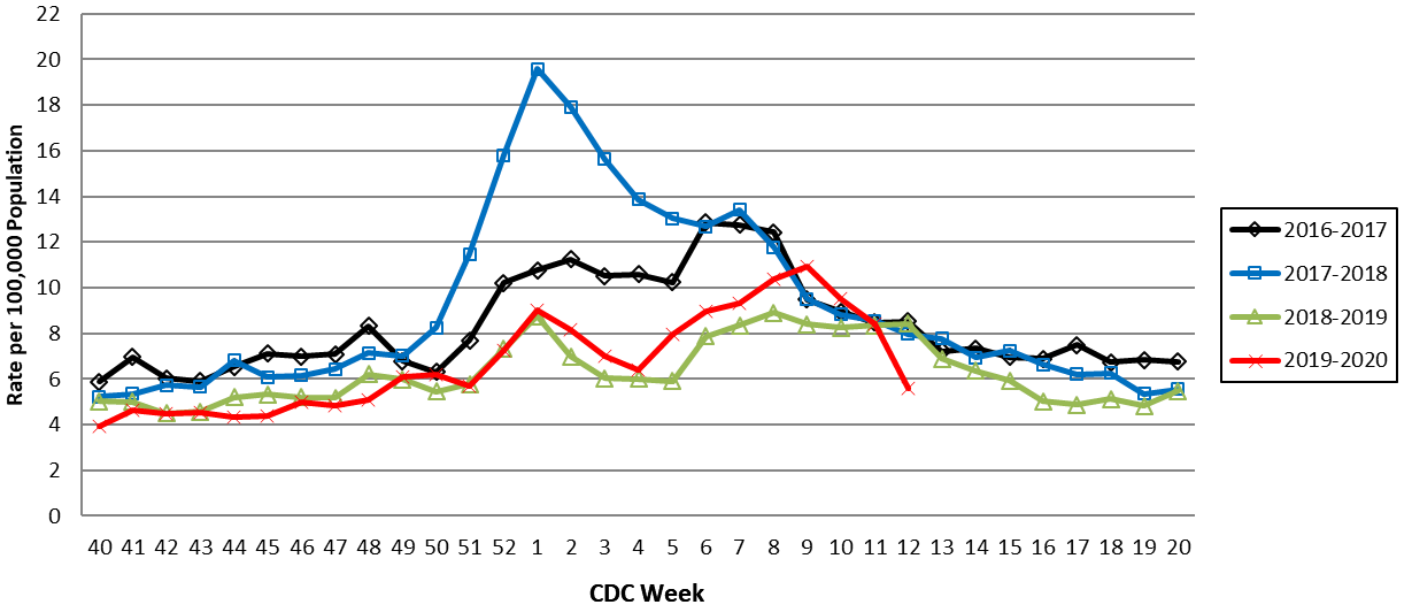
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 9. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Region and Statewide, 2019-2020 Influenza Season*



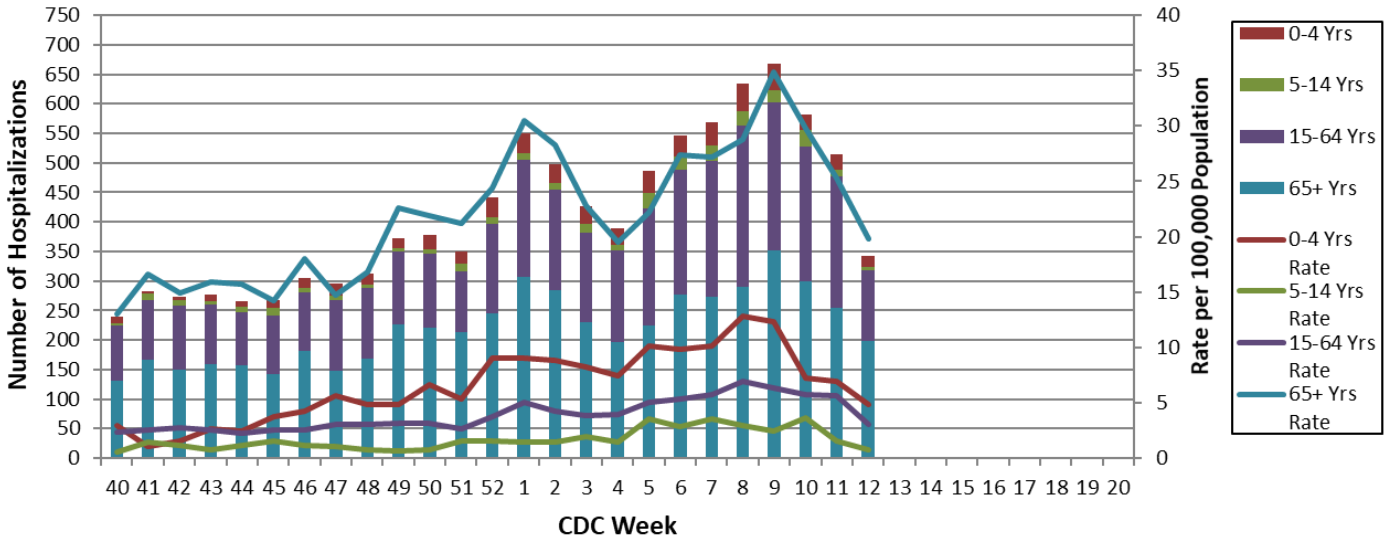
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 10. Weekly Rate of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Missouri Hospitals, 2016-2020 Influenza Seasons



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.
Population data from Missouri Census Data Center 2017 (https://census.missouri.edu).

Figure 11. Number of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Participating Missouri Hospitals, by Age Group, Week 12, 2019-2020 Influenza Season



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.

Additional Influenza Data Sources:

Centers for Disease Control and Prevention: National Influenza Surveillance (FluView):
http://www.cdc.gov/flu/weekly/fluactivitysurv.htm

The National Respiratory and Enteric Virus Surveillance System (NREVSS):
https://www.cdc.gov/surveillance/nrevss/

World Health Organization: International Influenza Surveillance:
http://www.who.int/influenza/surveillance_monitoring/en/

Missouri Weekly Influenza Surveillance Report 2019-2020 Influenza Season[1]

Week 13: March 22, 2020 – March 28, 2020

All data are preliminary and may change as more reports are received.

Summary:

- The estimated influenza activity in Missouri is Regional[2].
- A total of 1,181 laboratory-positive[3] influenza cases (638 influenza A and 543 influenza B) were reported during Week 13. The season-to-date total of laboratory-positive influenza cases is 111,354 (48.4% influenza A, 50.8% influenza B, and 0.8% untyped). The percentage of respiratory specimens testing positive for influenza in Missouri laboratories reporting to the National Respiratory and Enteric Virus Surveillance System (NREVSS) decreased during Week 13 (Figure 6). Influenza test results from the Missouri State Public Health Laboratory (MSPHL) are currently not available. The MSPHL has temporarily suspended routine influenza testing in order to divert available resources to COVID-19 testing.
- Influenza-like illness (ILI) activity was above baseline for the Missouri Outpatient ILI Surveillance Network (ILINet) and for the hospital emergency room visit chief complaint data reported through ESSENCE. The reported percentage of visits for ILI was 7.39% (Figure 5) and 3.97% (Figure 7) through ILINet and ESSENCE respectively.[4] The ILI data from a small number of sites located in the Northwest Region of the state is currently unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.
- A season-to-date total of 74 influenza-associated deaths have been reported in Missouri as of Week 13.[5] During Week 12, 84 deaths involving Pneumonia and Influenza (P&I) were reported to the Bureau of Vital Records, resulting in a season-to-date total of 1,345 P&I associated deaths in Missouri.[6]
- Thirteen influenza outbreaks and eight school closures have been reported in Missouri as of Week 13.
- Seasonal influenza activity as reported by clinical laboratories in the United States continued to decrease during Week 12. However, influenza-like illness activity increased. National influenza surveillance information is prepared by CDC and is included in the weekly FluView report, which is available online at http://www.cdc.gov/flu/weekly/fluactivitysurv.htm.

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[1]The 2019-2020 influenza season begins CDC Week 40 (week ending October 5, 2019) and ends CDC Week 39 (week ending September 26, 2020).

[2]Regional is defined as: Outbreaks of influenza or increases in ILI and recent laboratory confirmed influenza in at least two but less than half the regions of the state with recent laboratory evidence of influenza in those regions.

[3]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.

[4]Influenza-like illness (ILI) is defined by ILINet as fever (temperature of 100°F [37.8°C] or greater) and a cough and/or a sore throat without a known cause other than influenza. ILI is defined by ESSENCE as Emergency Department chief complaints for Influenza or (FeverPlus and (Cough or SoreThroat) and not NonILIFevers).

[5]All influenza-associated deaths became reportable in Missouri in 2016. These reports are verified by local public health agencies and DHSS.

[6]The P&I data are obtained from vital statistics data using ICD-10 codes, which are available one week later. The P&I data for the CDC Week provided is the most current data available.

Surveillance Data:

Interactive Maps

The jurisdiction-specific influenza data are provided though interactive maps available at http://bit.ly/moflu19. *Click on the jurisdiction to view the influenza data specific to that jurisdiction.*

- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, CDC Week 13**
- **Reported Week-specific Rate per 100,000 Population, CDC Week 13**
- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, Season-to-Date**
- **Reported Rate per 100,000 Population, Season-to-Date**

Data Figures

Figure 1. Number of Laboratory-positive† Influenza Cases by Influenza Type, Missouri, CDC Week 13 (March 22, 2020 – March 28, 2020)*

Influenza Type	Week 11	Week 12	Week 13	2019-2020* Season-to-Date
Influenza A	3,956	2,081	638	53,934
Influenza B	2,643	1,628	543	56,561
Influenza Unknown Or Untyped	21	6	0	859
Total	6,620	3,715	1,181	111,354

†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv).

Figure 2. Number of Laboratory-positive† Influenza Cases and Case Rates by Age Group, Missouri, CDC Week 13 (March 22, 2020 – March 28, 2020)*‡

Age Group	Week 13 Cases	Week 13 Rate‡	2019-2020* Season-to-Date	2019-2020* Season-to-Date Rate‡
00-04	188	50.22	19,186	5,125.01
05-24	392	24.43	48,773	3,039.73
25-49	327	17.09	26,391	1,379.20
50-64	153	12.37	10,530	851.68
65+	121	12.67	6,473	677.86
Total	1,181	19.41	111,354	1,830.37

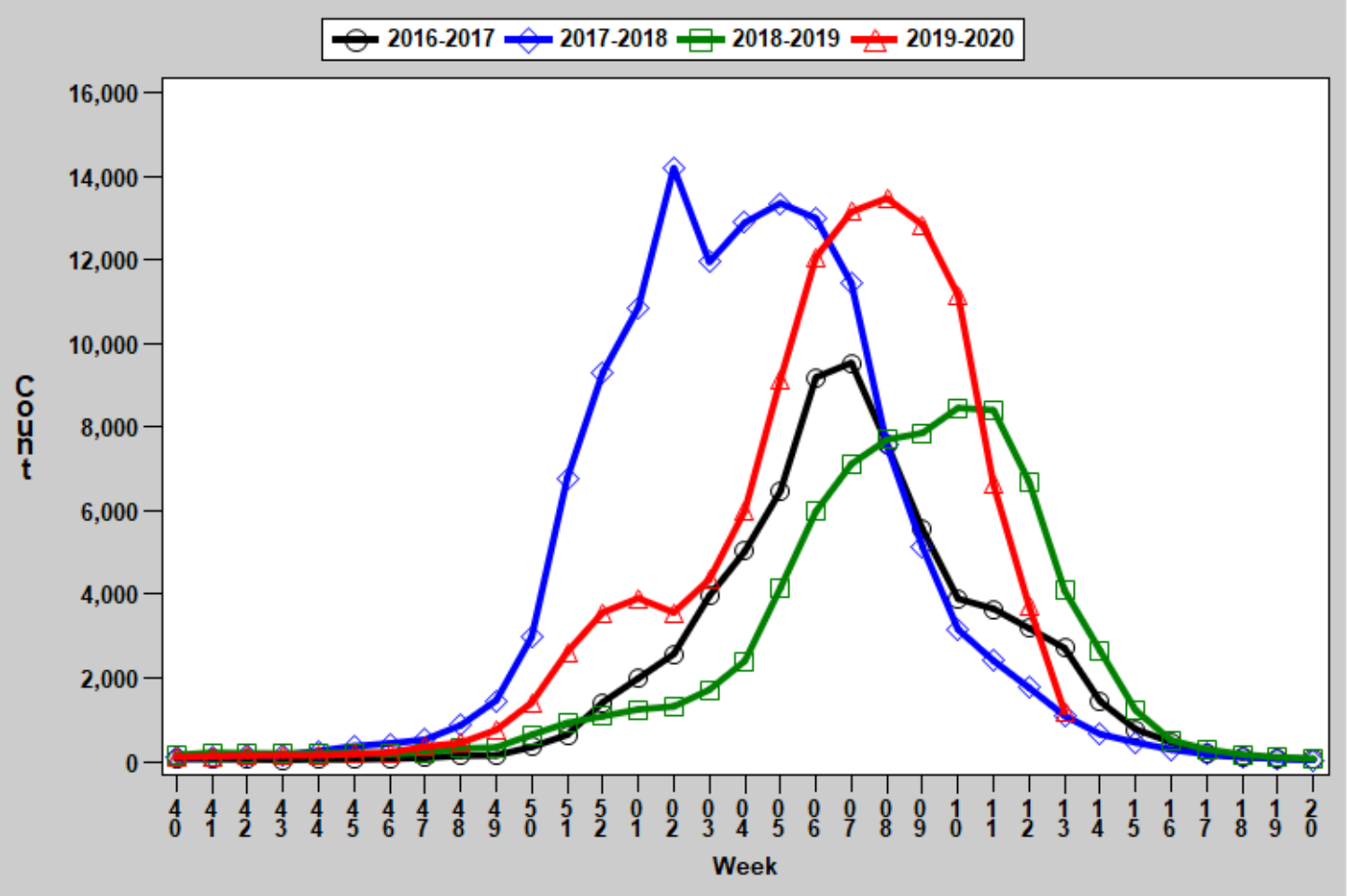
†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
‡Incidence Rate per 100,000 population

Figure 3. Number of Laboratory-positive[†] Influenza Cases and Case Rates by Region, Missouri, CDC Week 13 (March 22, 2020 – March 28, 2020)[*‡]

Region	Week 13 Cases	Week 13 Rate[‡]	2019-2020* Season-to-Date	2019-2020* Season-to-Date Rate[‡]
Central	86	12.70	14,853	2,193.95
Eastern	705	31.11	30,826	1,360.28
Northwest	175	10.95	32,890	2,058.81
Southeast	130	27.56	12,413	2,631.55
Southwest	85	7.93	20,372	1,901.61
Total	1,181	19.41	111,354	1,830.37

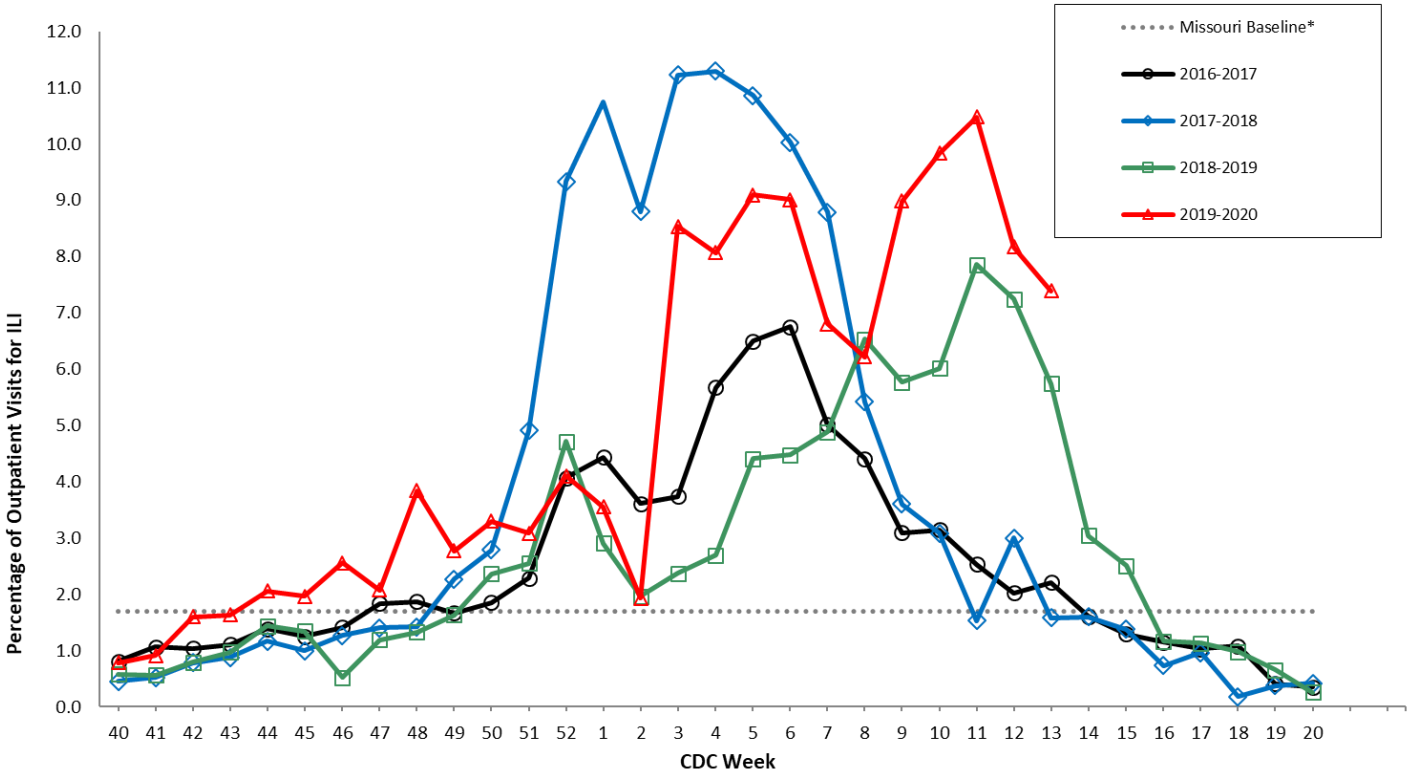
[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
[‡]Incidence Rate per 100,000 population

Figure 4. Number of Laboratory-positive[†] Influenza Cases by CDC Week, Missouri, 2016-2020[*]



[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).Data Source: Missouri Health Information Surveillance System (WebSurv).

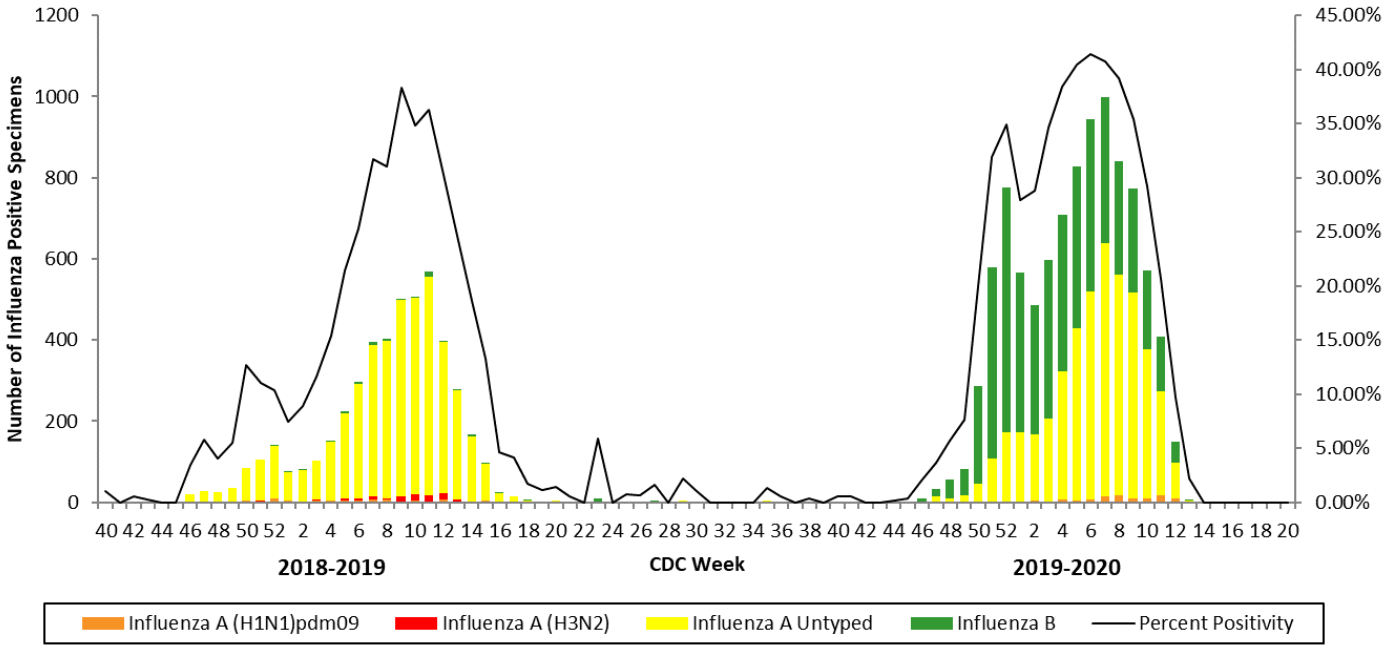
Figure 5. Percentage of Outpatient Visits for Influenza-like Illness (ILI), Missouri Outpatient ILI Surveillance Network (ILINet) 2016-2020*†



*The ILINet Region 7 (MO, IA, KS, NE) baseline is the mean percentage of patient visits for ILI during non-influenza weeks for the previous three seasons, plus two standard deviations. A non-influenza week is defined as periods of two or more consecutive weeks in which each week accounted for less than 2% of the season's total number of specimens that tested positive for influenza. Data Source: U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Centers for Disease Control and Prevention (CDC).

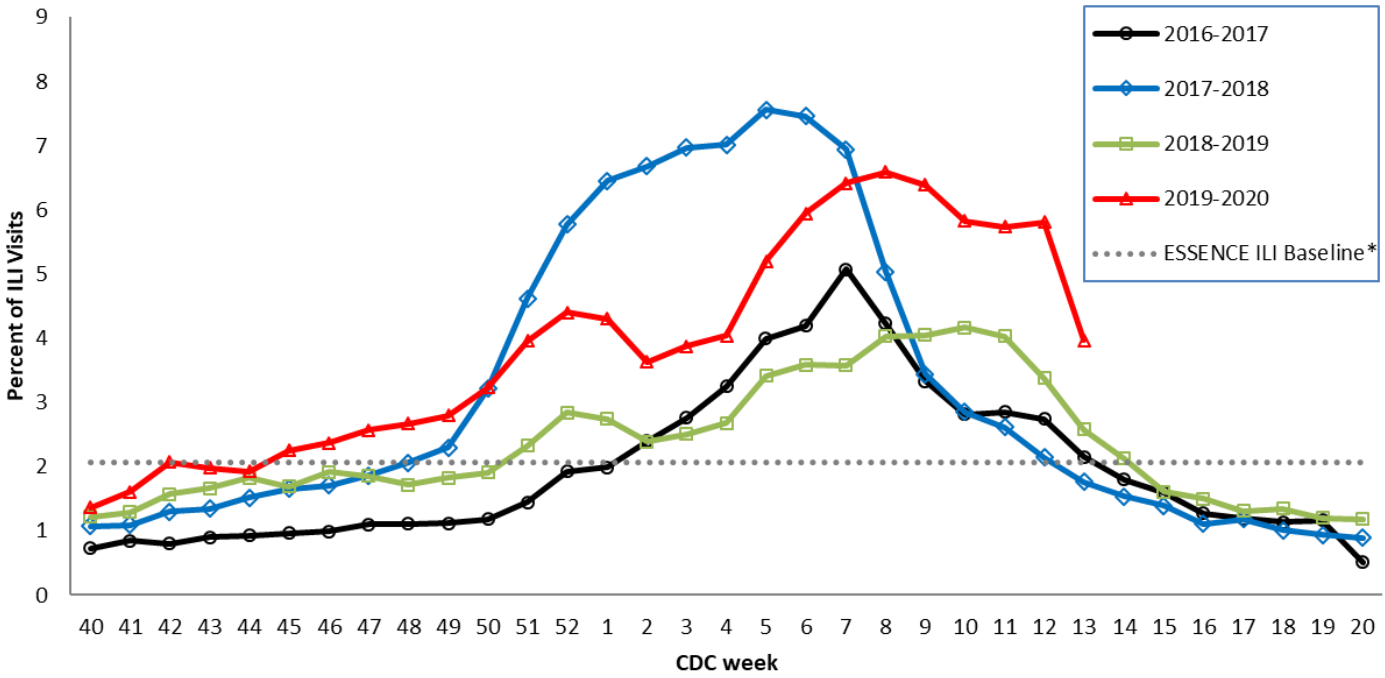
†2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).

Figure 6. Season-to-Date PCR (+) Tests for Influenza in Missouri



Data Source: National Respiratory and Enteric Virus Surveillance System (NREVSS), Centers for Disease Control and Prevention (CDC). 2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).

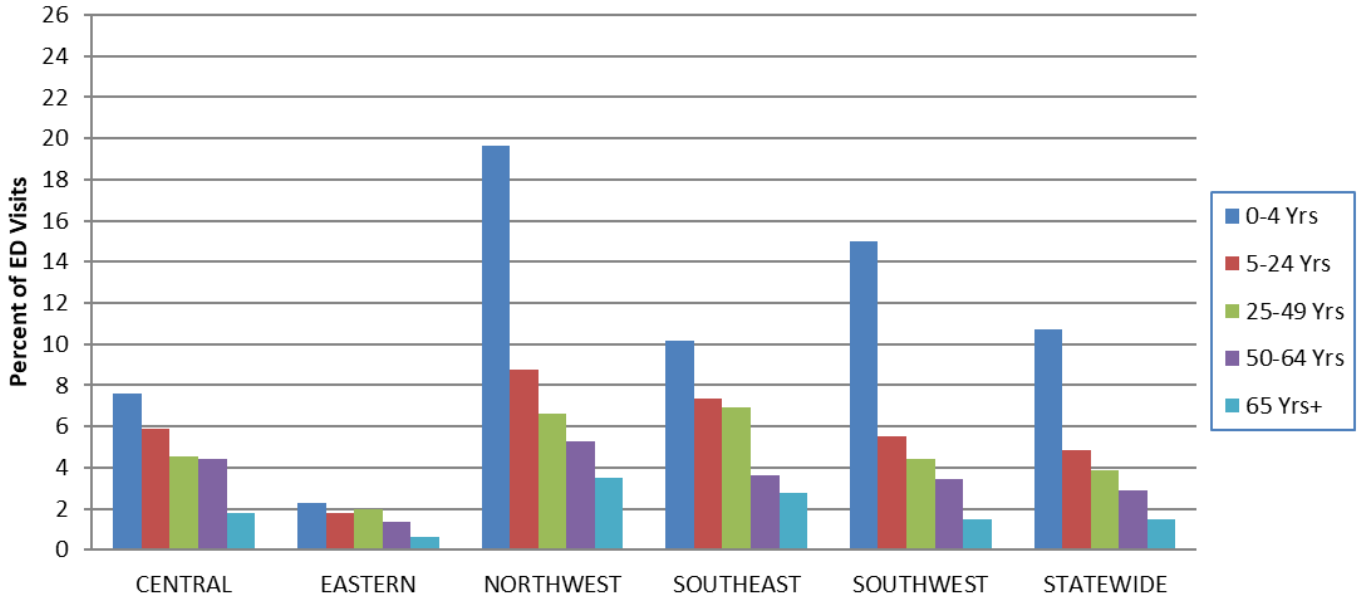
Figure 7. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, 2016-2020 Influenza Seasons*‡



*The ESSENCE ILI Baseline is the mean percent of ILI visits for each week during the previous three years (2016-18) when percentage of ILI visits were less than 2% of total visits, plus two standard deviations. Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.

‡The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

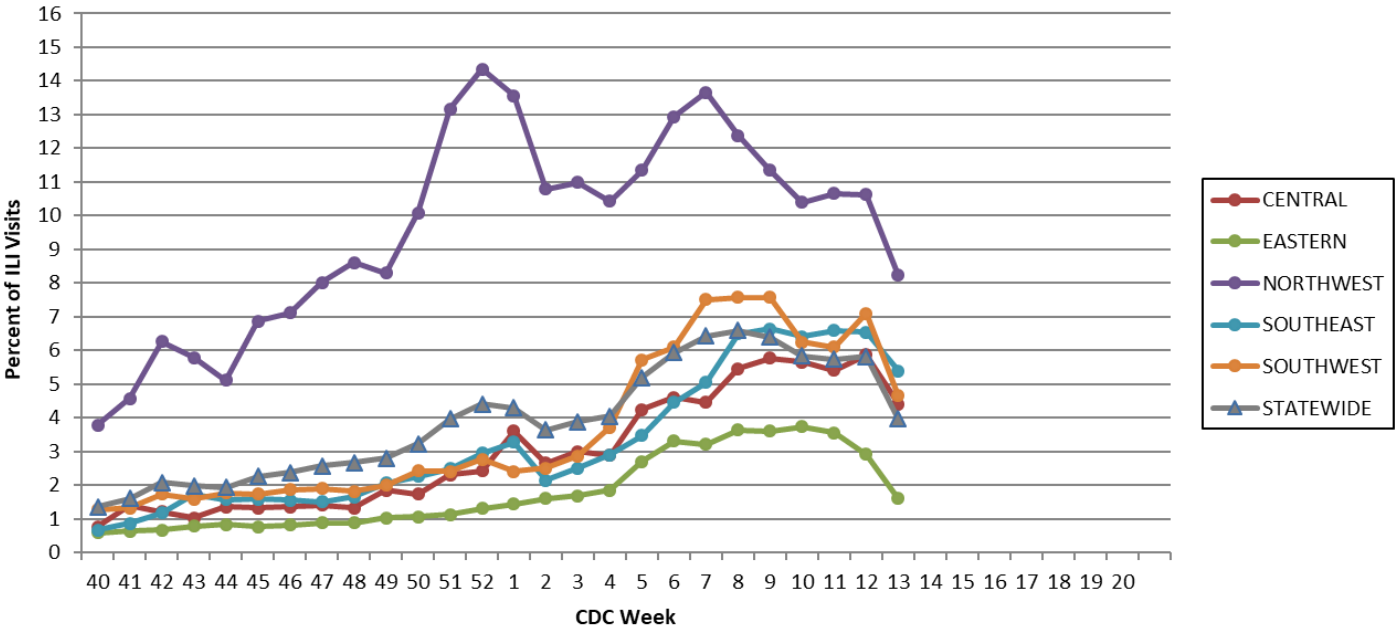
Figure 8. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Age Group, Region and Statewide, Week 13, 2020*



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.

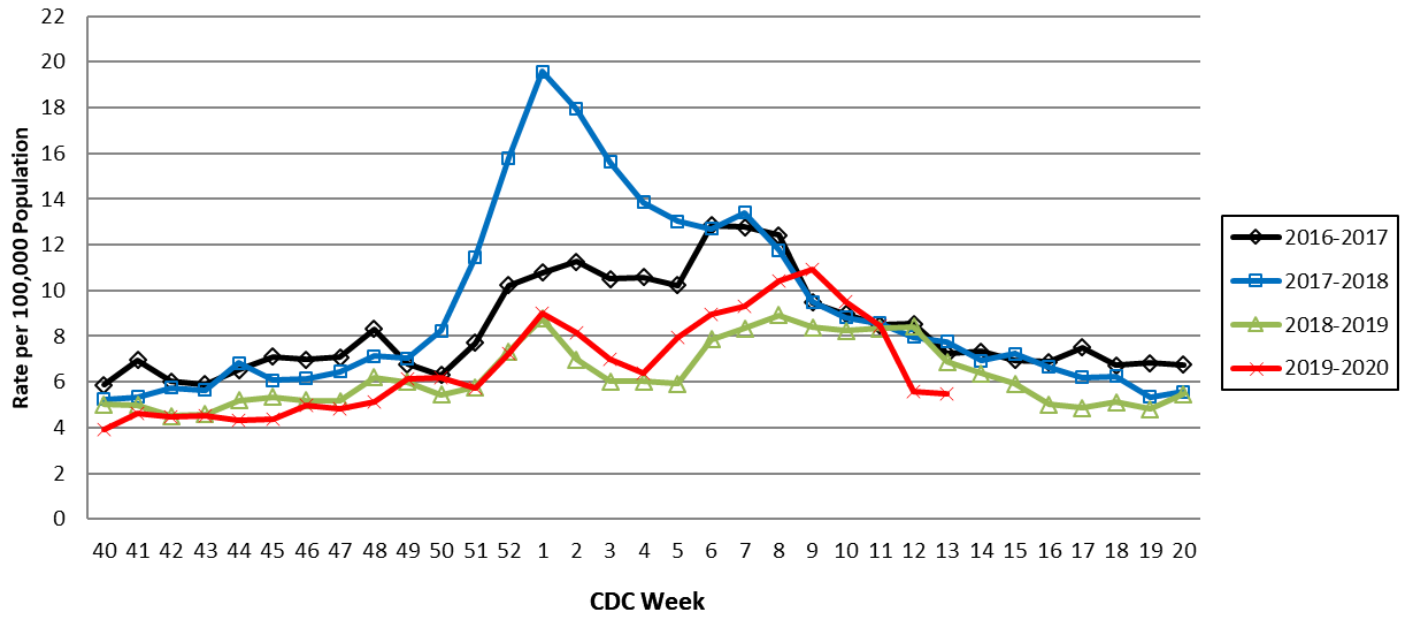
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 9. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Region and Statewide, 2019-2020 Influenza Season*



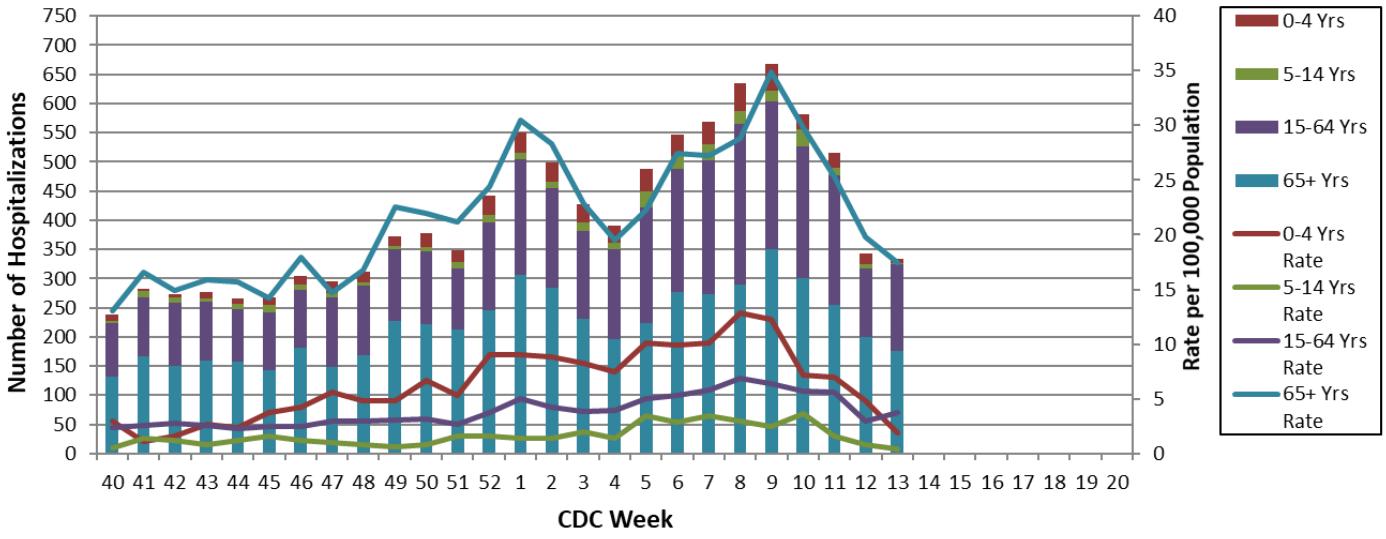
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 10. Weekly Rate of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Missouri Hospitals, 2016-2020 Influenza Seasons



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.
Population data from Missouri Census Data Center 2017 (https://census.missouri.edu).

Figure 11. Number of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Participating Missouri Hospitals, by Age Group, Week 13, 2019-2020 Influenza Season



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.

Additional Influenza Data Sources:

Centers for Disease Control and Prevention: National Influenza Surveillance (FluView):
http://www.cdc.gov/flu/weekly/fluactivitysurv.htm

The National Respiratory and Enteric Virus Surveillance System (NREVSS):
https://www.cdc.gov/surveillance/nrevss/

World Health Organization: International Influenza Surveillance:
http://www.who.int/influenza/surveillance_monitoring/en/

Missouri Weekly Influenza Surveillance Report
2019-2020 Influenza Season[1]

Week 14: March 29, 2020 – April 4, 2020

All data are preliminary and may change as more reports are received.

Summary:

- The estimated influenza activity in Missouri is Local[2].
- A total of 332 laboratory-positive[3] influenza cases (175 influenza A, 156 influenza B, and 1 untyped) were reported during Week 14. The season-to-date total of laboratory-positive influenza cases is 112,633 (48.5% influenza A, 50.7% influenza B, and 0.8% untyped). The percentage of respiratory specimens testing positive for influenza in Missouri laboratories reporting to the National Respiratory and Enteric Virus Surveillance System (NREVSS) decreased during Week 14 (Figure 6). Influenza test results from the Missouri State Public Health Laboratory (MSPHL) are currently not available. The MSPHL has temporarily suspended routine influenza testing in order to divert available resources to COVID-19 testing.
- Influenza-like illness (ILI) activity was above baseline for the Missouri Outpatient ILI Surveillance Network (ILINet) and for the hospital emergency room visit chief complaint data reported through ESSENCE. The reported percentage of visits for ILI was 2.60% (Figure 5) and 2.54% (Figure 7) through ILINet and ESSENCE respectively.[4] The ILI data from a small number of sites located in the Northwest Region of the state is currently unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.
- A season-to-date total of 76 influenza-associated deaths have been reported in Missouri as of Week 14.[5] During Week 13, 86 deaths involving Pneumonia and Influenza (P&I) were reported to the Bureau of Vital Records, resulting in a season-to-date total of 1,431 P&I associated deaths in Missouri.[6]
- Thirteen influenza outbreaks and eight school closures have been reported in Missouri as of Week 14.
- Seasonal influenza activity as reported by clinical laboratories in the United States continued to decrease sharply Week 13 and is now low. Influenza-like illness activity, while lower than previous week, is still elevated. National influenza surveillance information is prepared by CDC and is included in the weekly FluView report, which is available online at http://www.cdc.gov/flu/weekly/fluactivitysurv.htm.

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[1]The 2019-2020 influenza season begins CDC Week 40 (week ending October 5, 2019) and ends CDC Week 39 (week ending September 26, 2020).

[2]Local is defined as: Outbreaks of influenza or increases in ILI cases and recent laboratory-confirmed influenza in a single region of the state.

[3]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.

[4]Influenza-like illness (ILI) is defined by ILINet as fever (temperature of 100°F [37.8°C] or greater) and a cough and/or a sore throat without a known cause other than influenza. ILI is defined by ESSENCE as Emergency Department chief complaints for Influenza or (FeverPlus and (Cough or SoreThroat) and not NonILIFevers).

[5]All influenza-associated deaths became reportable in Missouri in 2016. These reports are verified by local public health agencies and DHSS.

[6]The P&I data are obtained from vital statistics data using ICD-10 codes, which are available one week later. The P&I data for the CDC Week provided is the most current data available.

Surveillance Data:

Interactive Maps

The jurisdiction-specific influenza data are provided though interactive maps available at http://bit.ly/moflu19. *Click on the jurisdiction to view the influenza data specific to that jurisdiction.*

- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, CDC Week 14**
- **Reported Week-specific Rate per 100,000 Population, CDC Week 14**
- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, Season-to-Date**
- **Reported Rate per 100,000 Population, Season-to-Date**

Data Figures

Figure 1. Number of Laboratory-positive† Influenza Cases by Influenza Type, Missouri, CDC Week 14 (March 29, 2020 – April 4, 2020)*

Influenza Type	Week 12	Week 13	Week 14	2019-2020* Season-to-Date
Influenza A	2,160	738	175	54,638
Influenza B	1,682	641	156	57,132
Influenza Unknown Or Untyped	7	2	1	863
Total	3,849	1,381	332	112,633

†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv).

Figure 2. Number of Laboratory-positive† Influenza Cases and Case Rates by Age Group, Missouri, CDC Week 14 (March 29, 2020 – April 4, 2020)*‡

Age Group	Week 14 Cases	Week 14 Rate‡	2019-2020* Season-to-Date	2019-2020* Season-to-Date Rate‡
00-04	68	18.16	19,421	5,187.79
05-24	81	5.05	49,222	3,067.72
25-49	112	5.85	26,751	1,398.01
50-64	42	3.40	10,676	863.49
65+	29	3.04	6,562	687.18
Total	332	5.46	112,633	1,851.40

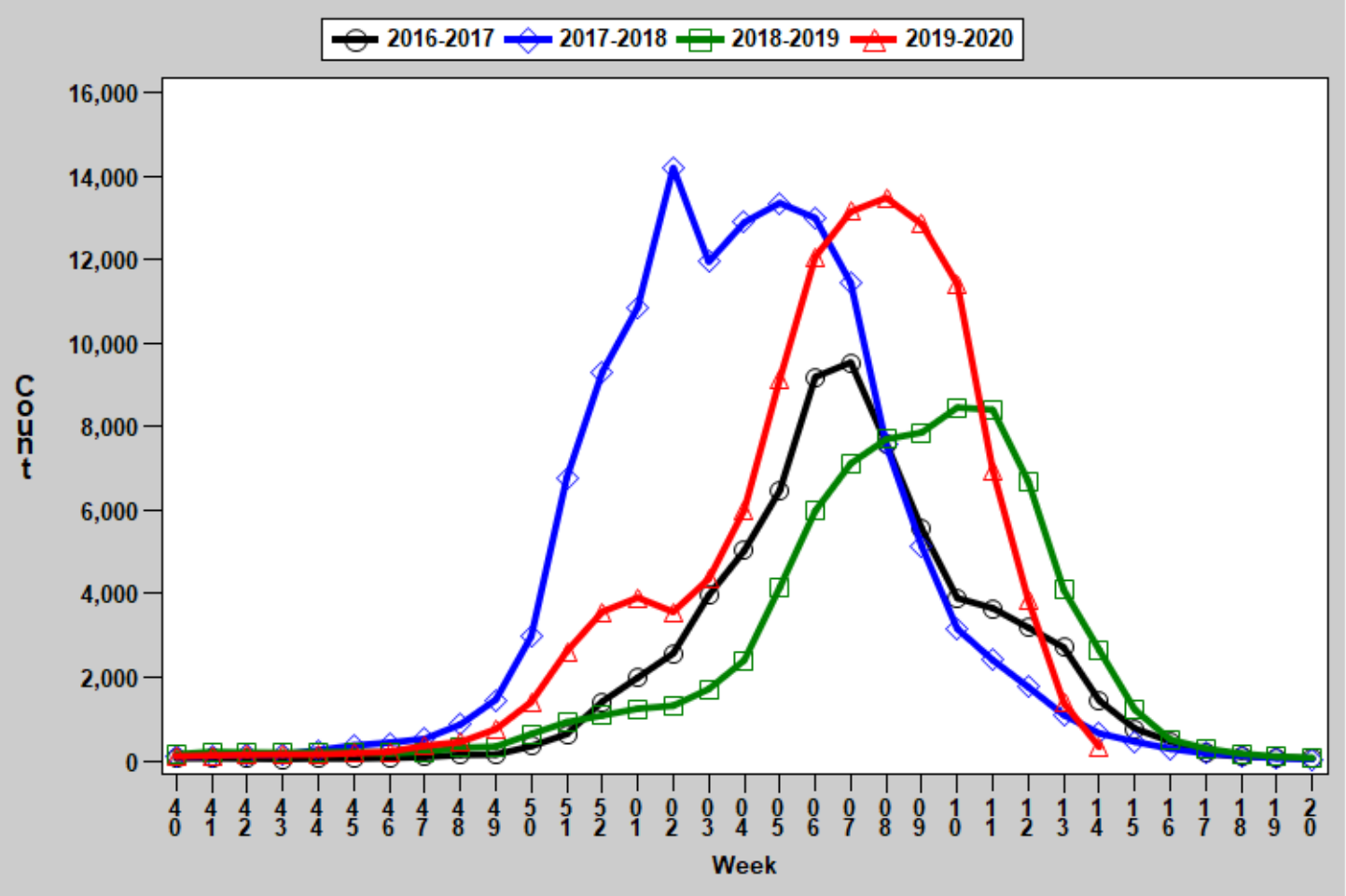
†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
‡Incidence Rate per 100,000 population

Figure 3. Number of Laboratory-positive[†] Influenza Cases and Case Rates by Region, Missouri, CDC Week 14 (March 29, 2020 – April 4, 2020)[*‡]

Region	Week 14 Cases	Week 14 Rate[‡]	2019-2020* Season-to-Date	2019-2020* Season-to-Date Rate[‡]
Central	20	2.95	14,921	2,203.99
Eastern	144	6.35	31,541	1,391.83
Northwest	50	3.13	32,981	2,064.51
Southeast	73	15.48	12,605	2,672.25
Southwest	45	4.20	20,585	1,921.50
Total	332	5.46	112,633	1,851.40

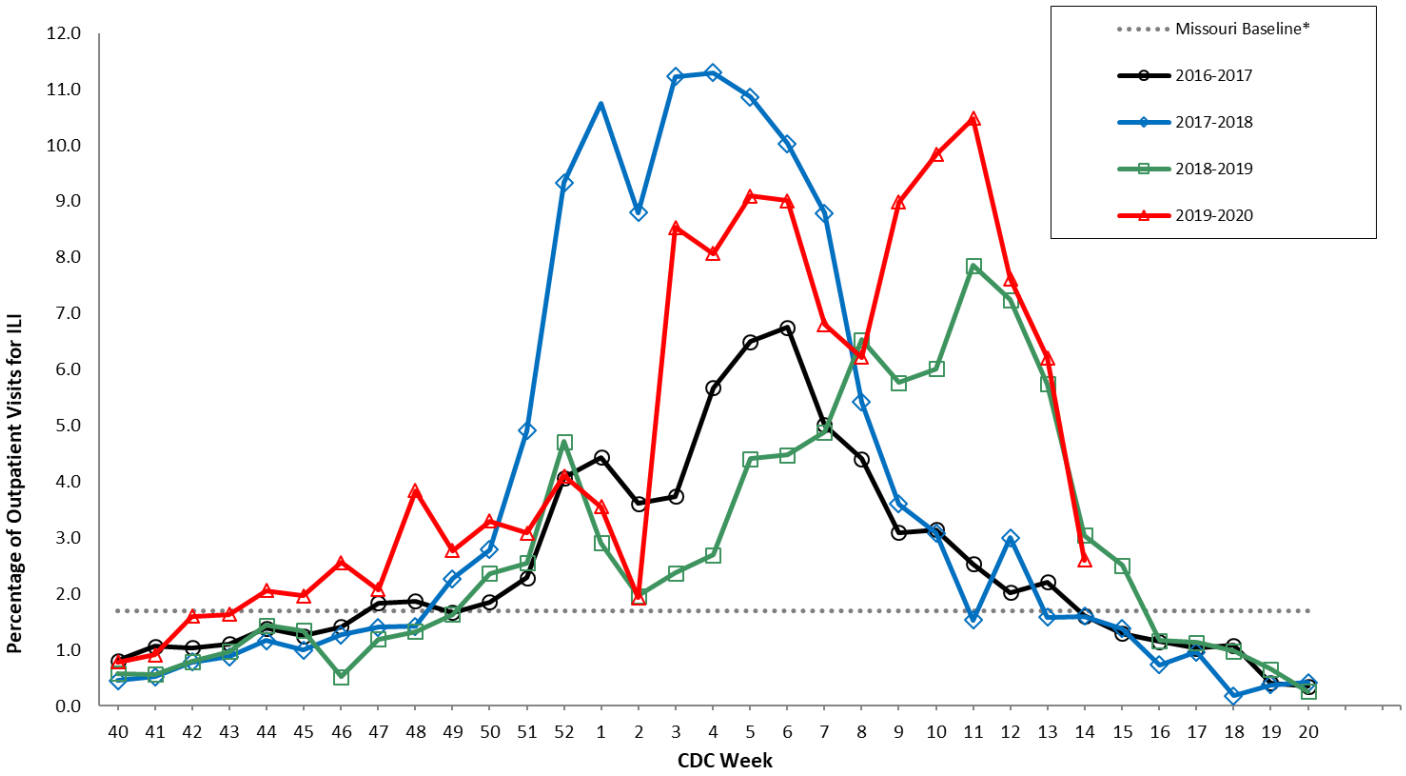
[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
[‡]Incidence Rate per 100,000 population

Figure 4. Number of Laboratory-positive[†] Influenza Cases by CDC Week, Missouri, 2016-2020[*]



[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).Data Source: Missouri Health Information Surveillance System (WebSurv).

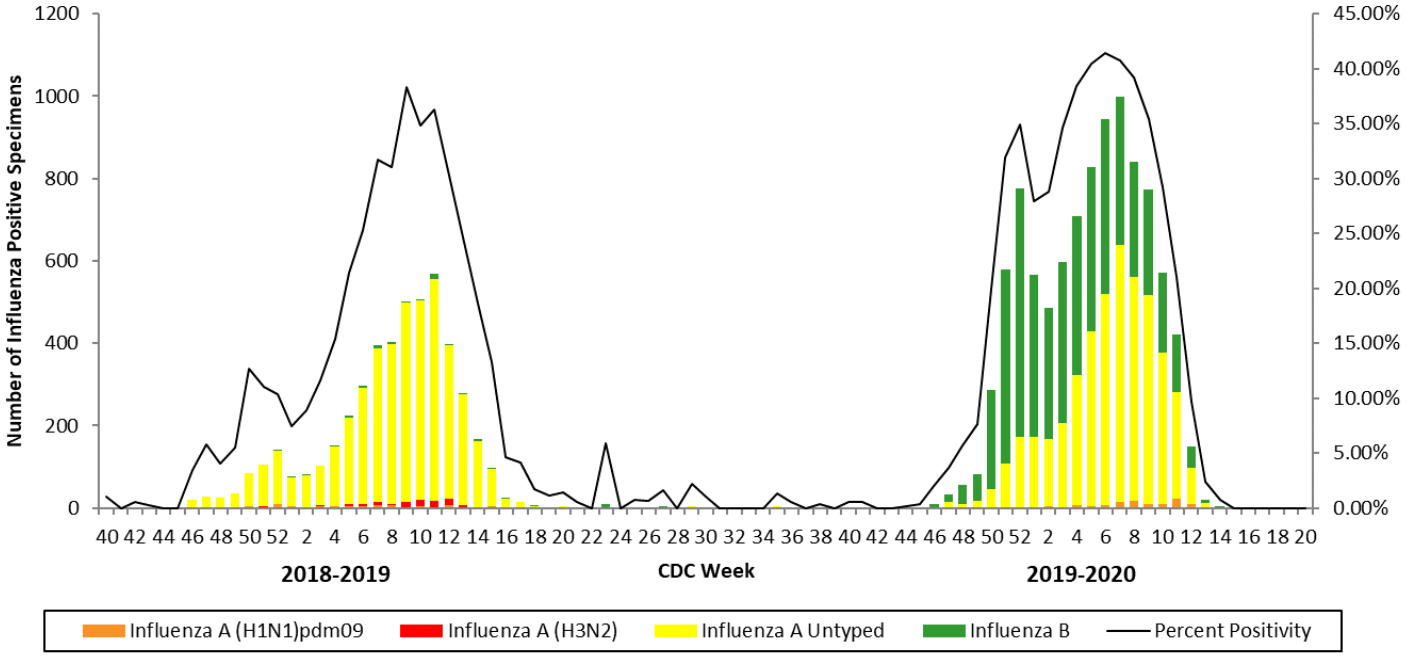
Figure 5. Percentage of Outpatient Visits for Influenza-like Illness (ILI), Missouri Outpatient ILI Surveillance Network (ILINet) 2016-2020*†



*The ILINet Region 7 (MO, IA, KS, NE) baseline is the mean percentage of patient visits for ILI during non-influenza weeks for the previous three seasons, plus two standard deviations. A non-influenza week is defined as periods of two or more consecutive weeks in which each week accounted for less than 2% of the season's total number of specimens that tested positive for influenza. Data Source: U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Centers for Disease Control and Prevention (CDC).

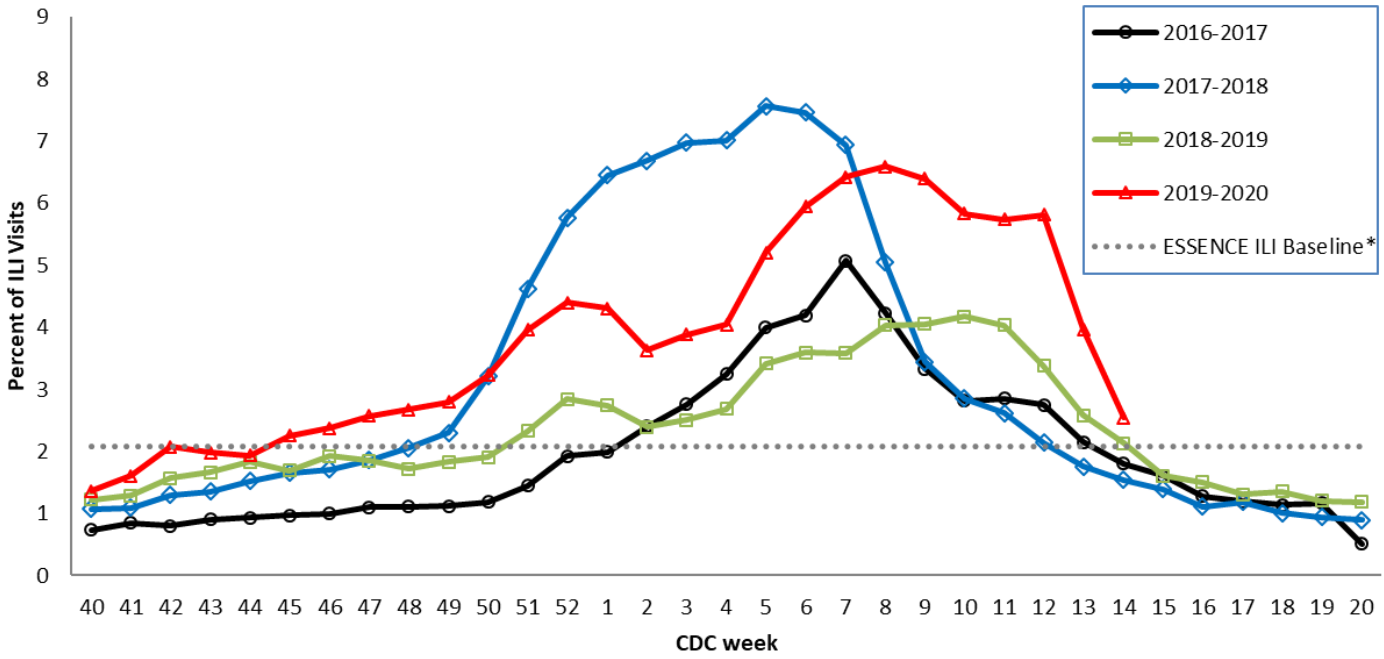
†2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).

Figure 6. Season-to-Date PCR (+) Tests for Influenza in Missouri



Data Source: National Respiratory and Enteric Virus Surveillance System (NREVSS), Centers for Disease Control and Prevention (CDC). 2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).

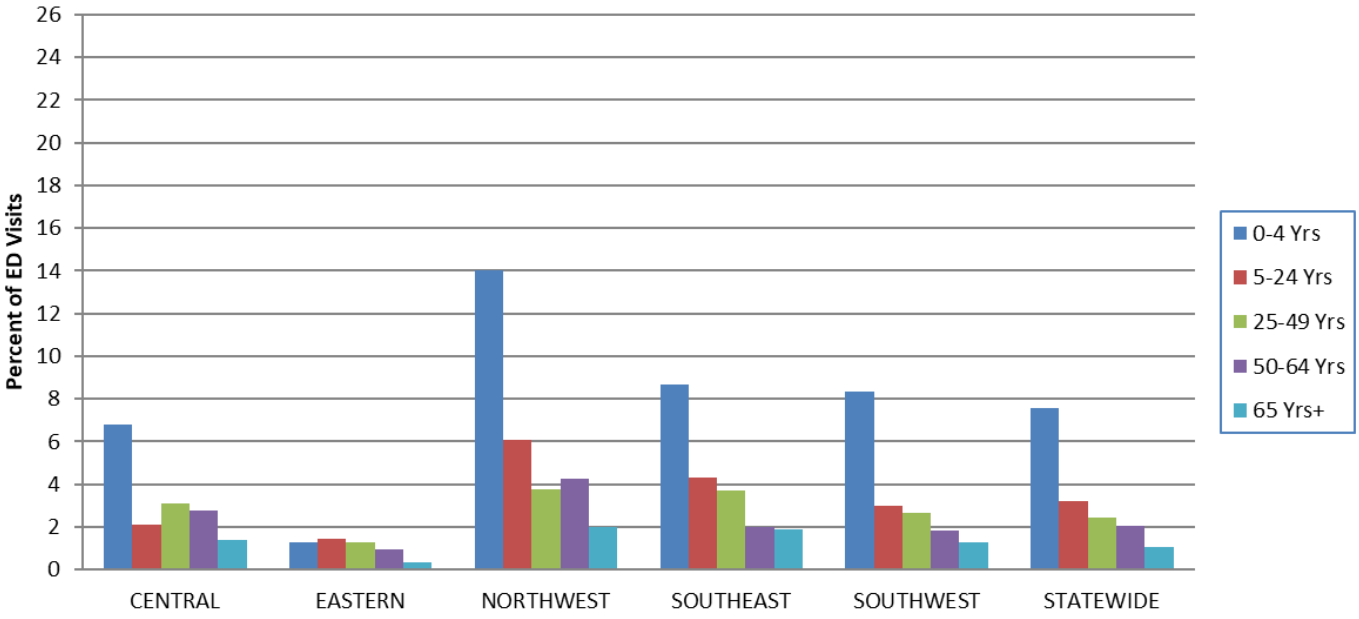
Figure 7. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, 2016-2020 Influenza Seasons*‡



*The ESSENCE ILI Baseline is the mean percent of ILI visits for each week during the previous three years (2016-18) when percentage of ILI visits were less than 2% of total visits, plus two standard deviations. Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.

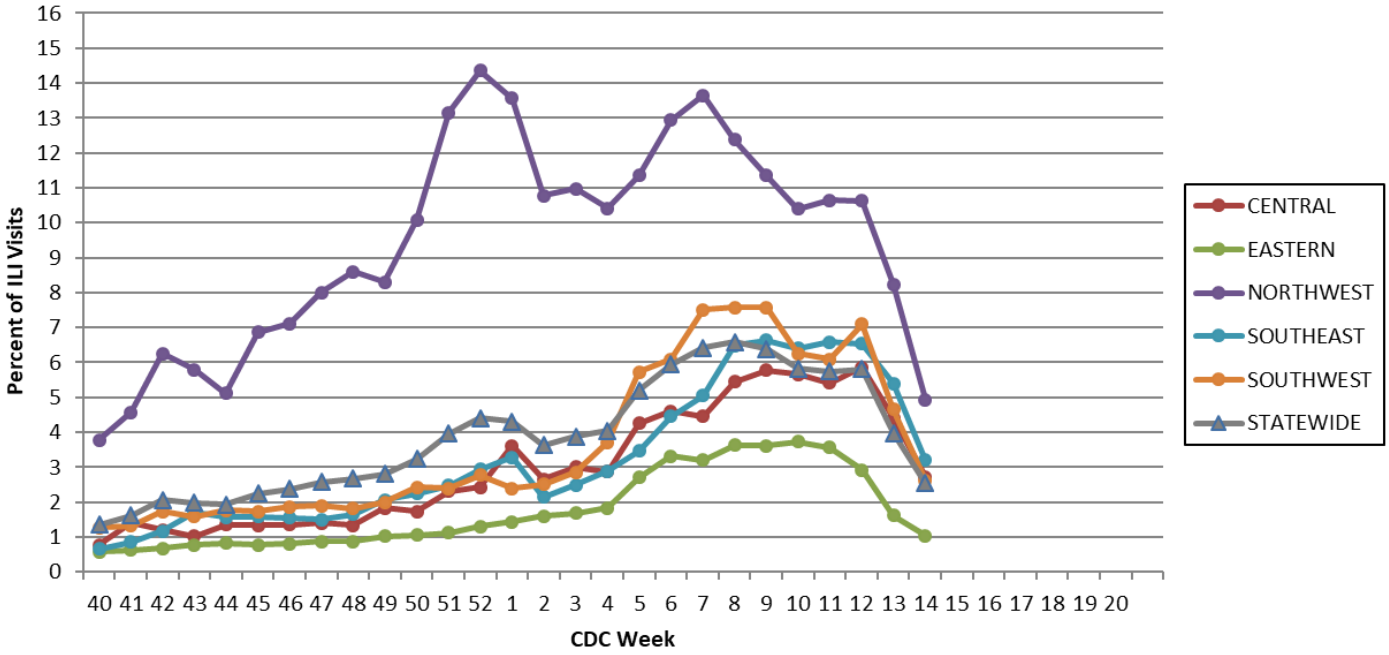
‡The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 8. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Age Group, Region and Statewide, Week 14, 2020*



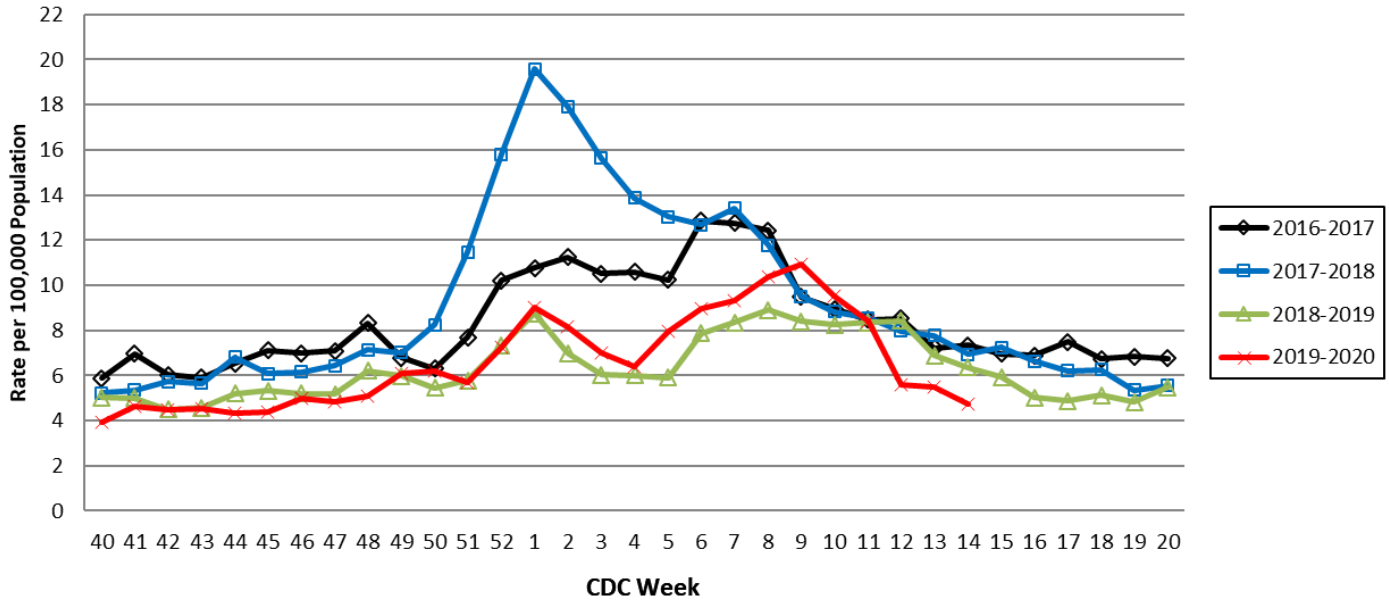
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 9. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Region and Statewide, 2019-2020 Influenza Season*



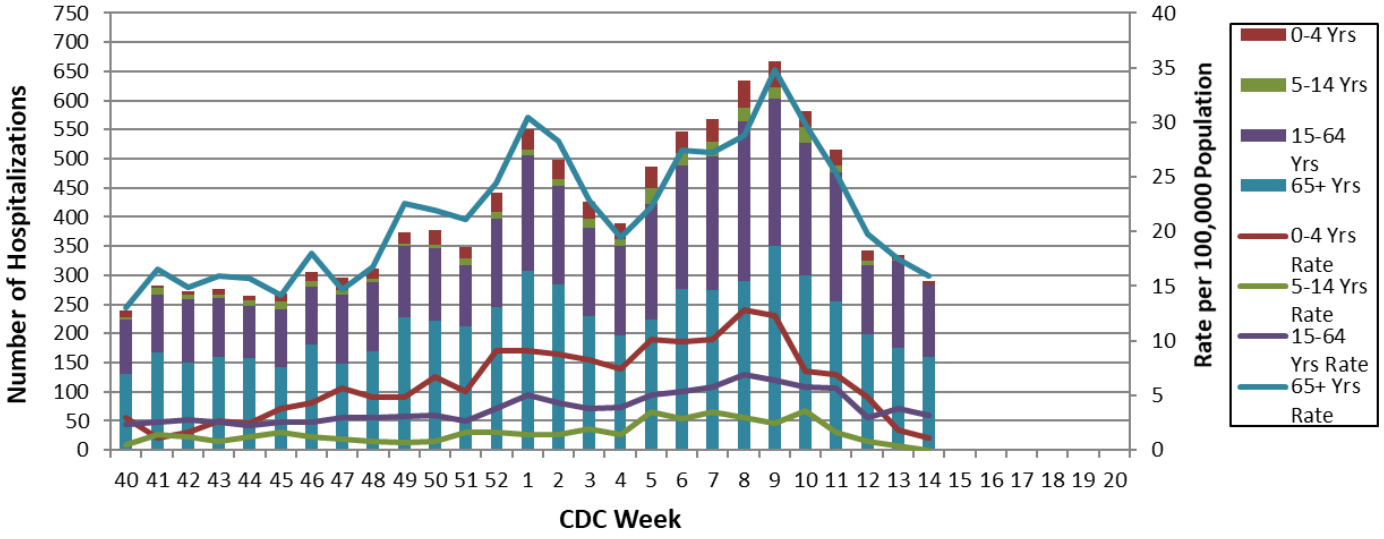
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 10. Weekly Rate of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Missouri Hospitals, 2016-2020 Influenza Seasons



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.
Population data from Missouri Census Data Center 2017 (https://census.missouri.edu).

Figure 11. Number of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Participating Missouri Hospitals, by Age Group, Week 14, 2019-2020 Influenza Season



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.

Additional Influenza Data Sources:

Centers for Disease Control and Prevention: National Influenza Surveillance (FluView):
http://www.cdc.gov/flu/weekly/fluactivitysurv.htm

The National Respiratory and Enteric Virus Surveillance System (NREVSS):
https://www.cdc.gov/surveillance/nrevss/

World Health Organization: International Influenza Surveillance:
http://www.who.int/influenza/surveillance_monitoring/en/

Missouri Weekly Influenza Surveillance Report 2019-2020 Influenza Season[1]

Week 15: April 5, 2020 – April 11, 2020

All data are preliminary and may change as more reports are received.

Summary:

- The estimated influenza activity in Missouri is Sporadic[2].
- A total of 121 laboratory-positive[3] influenza cases (64 influenza A and 57 influenza B) were reported during Week 15. The season-to-date total of laboratory-positive influenza cases is 112,965 (48.5% influenza A, 50.7% influenza B, and 0.8% untyped). The percentage of respiratory specimens testing positive for influenza in Missouri laboratories reporting to the National Respiratory and Enteric Virus Surveillance System (NREVSS) decreased during Week 15 (Figure 6). Influenza test results from the Missouri State Public Health Laboratory (MSPHL) are currently not available. The MSPHL has temporarily suspended routine influenza testing in order to divert available resources to COVID-19 testing.
- Influenza-like illness (ILI) activity was below baseline for the Missouri Outpatient ILI Surveillance Network (ILINet) and for the hospital emergency room visit chief complaint data reported through ESSENCE. The reported percentage of visits for ILI was 0.69% (Figure 5) and 1.78% (Figure 7) through ILINet and ESSENCE respectively.[4] The ILI data from a small number of sites located in the Northwest Region of the state is currently unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.
- A season-to-date total of 78 influenza-associated deaths have been reported in Missouri as of Week 15.[5] During Week 14, 110 deaths involving Pneumonia and Influenza (P&I) were reported to the Bureau of Vital Records, resulting in a season-to-date total of 1,541 P&I associated deaths in Missouri.[6]
- Thirteen influenza outbreaks and eight school closures have been reported in Missouri as of Week 15.
- Seasonal influenza activity as reported by clinical laboratories in the United States continued to decrease sharply Week 14 and is now low. Influenza-like illness activity, while lower than previous week, is still elevated. National influenza surveillance information is prepared by CDC and is included in the weekly FluView report, which is available online at http://www.cdc.gov/flu/weekly/fluactivitysurv.htm.

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[1]The 2019-2020 influenza season begins CDC Week 40 (week ending October 5, 2019) and ends CDC Week 39 (week ending September 26, 2020).

[2]Sporadic is defined as: Small numbers of laboratory-confirmed influenza cases or a single laboratory-confirmed influenza outbreak has been reported, but there is no increase in cases of ILI.

[3]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.

[4]Influenza-like illness (ILI) is defined by ILINet as fever (temperature of 100°F [37.8°C] or greater) and a cough and/or a sore throat without a known cause other than influenza. ILI is defined by ESSENCE as Emergency Department chief complaints for Influenza or (FeverPlus and (Cough or SoreThroat) and not NonILIFevers).

[5]All influenza-associated deaths became reportable in Missouri in 2016. These reports are verified by local public health agencies and DHSS.

[6]The P&I data are obtained from vital statistics data using ICD-10 codes, which are available one week later. The P&I data for the CDC Week provided is the most current data available.

Surveillance Data:

Interactive Maps

The jurisdiction-specific influenza data are provided though interactive maps available at http://bit.ly/moflu19. *Click on the jurisdiction to view the influenza data specific to that jurisdiction.*

- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, CDC Week 15**
- **Reported Week-specific Rate per 100,000 Population, CDC Week 15**
- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, Season-to-Date**
- **Reported Rate per 100,000 Population, Season-to-Date**

Data Figures

Figure 1. Number of Laboratory-positive† Influenza Cases by Influenza Type, Missouri, CDC Week 15 (April 5, 2020 – April 11, 2020)*

Influenza Type	Week 13	Week 14	Week 15	2019-2020* Season-to-Date
Influenza A	766	199	64	54,802
Influenza B	669	188	57	57,299
Influenza Unknown Or Untyped	2	2	0	864
Total	1,437	389	121	112,965

†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv).

Figure 2. Number of Laboratory-positive† Influenza Cases and Case Rates by Age Group, Missouri, CDC Week 15 (April 5, 2020 – April 11, 2020)*‡

Age Group	Week 15 Cases	Week 15 Rate‡	2019-2020* Season-to-Date	2019-2020* Season-to-Date Rate‡
00-04	22	5.88	19,476	5,202.48
05-24	31	1.93	49,343	3,075.26
25-49	34	1.78	26,823	1,401.78
50-64	19	1.54	10,721	867.13
65+	15	1.57	6,601	691.26
Total	121	1.99	112,965	1,856.86

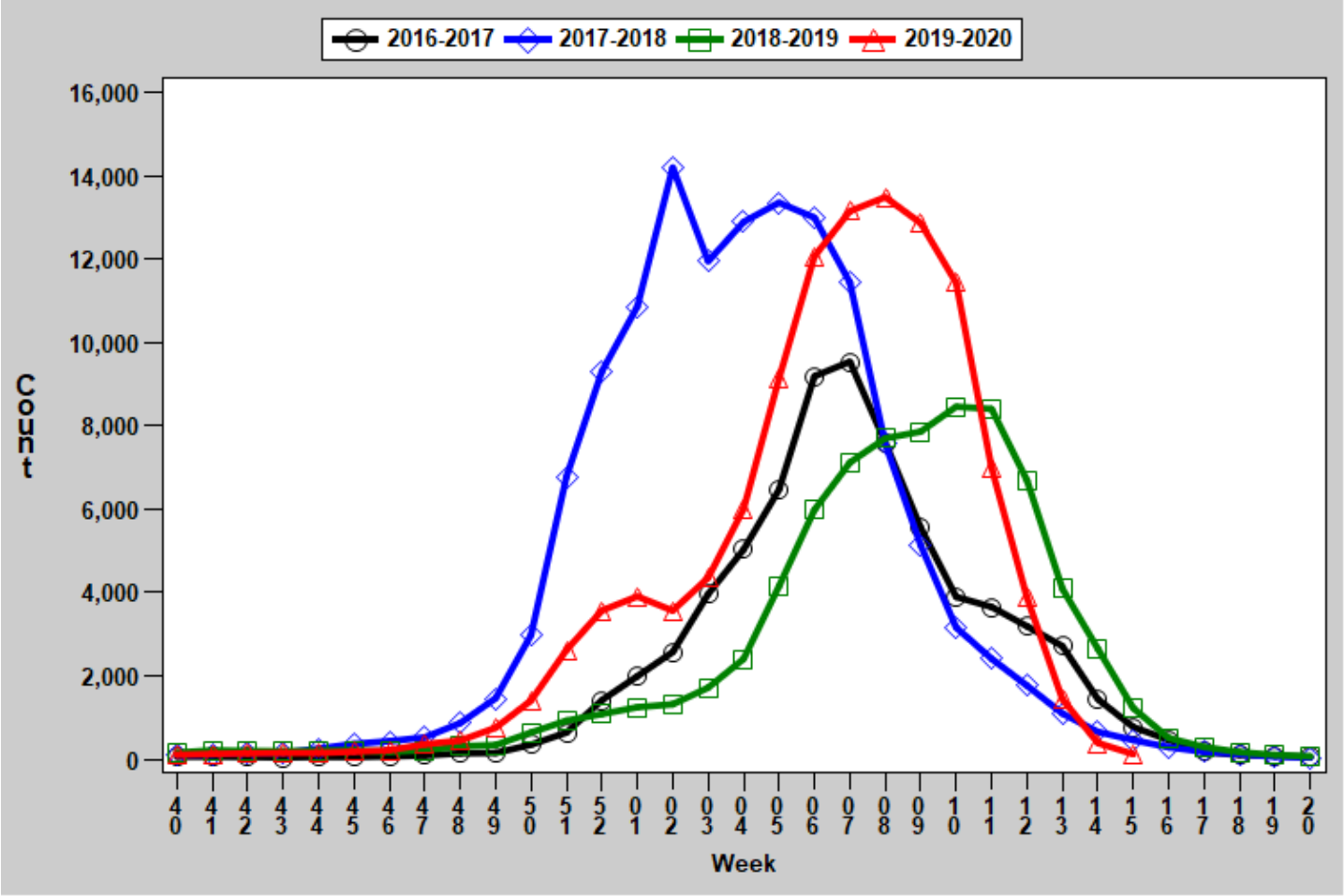
†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
‡Incidence Rate per 100,000 population

Figure 3. Number of Laboratory-positive[†] Influenza Cases and Case Rates by Region, Missouri, CDC Week 15 (April 5, 2020 – April 11, 2020)[*‡]

Region	Week 15 Cases	Week 15 Rate[‡]	2019-2020* Season-to-Date	2019-2020* Season-to-Date Rate[‡]
Central	7	1.03	14,981	2,212.86
Eastern	40	1.77	31,655	1,396.86
Northwest	39	2.44	33,035	2,067.89
Southeast	16	3.39	12,662	2,684.34
Southwest	19	1.77	20,632	1,925.88
Total	121	1.99	112,965	1,856.86

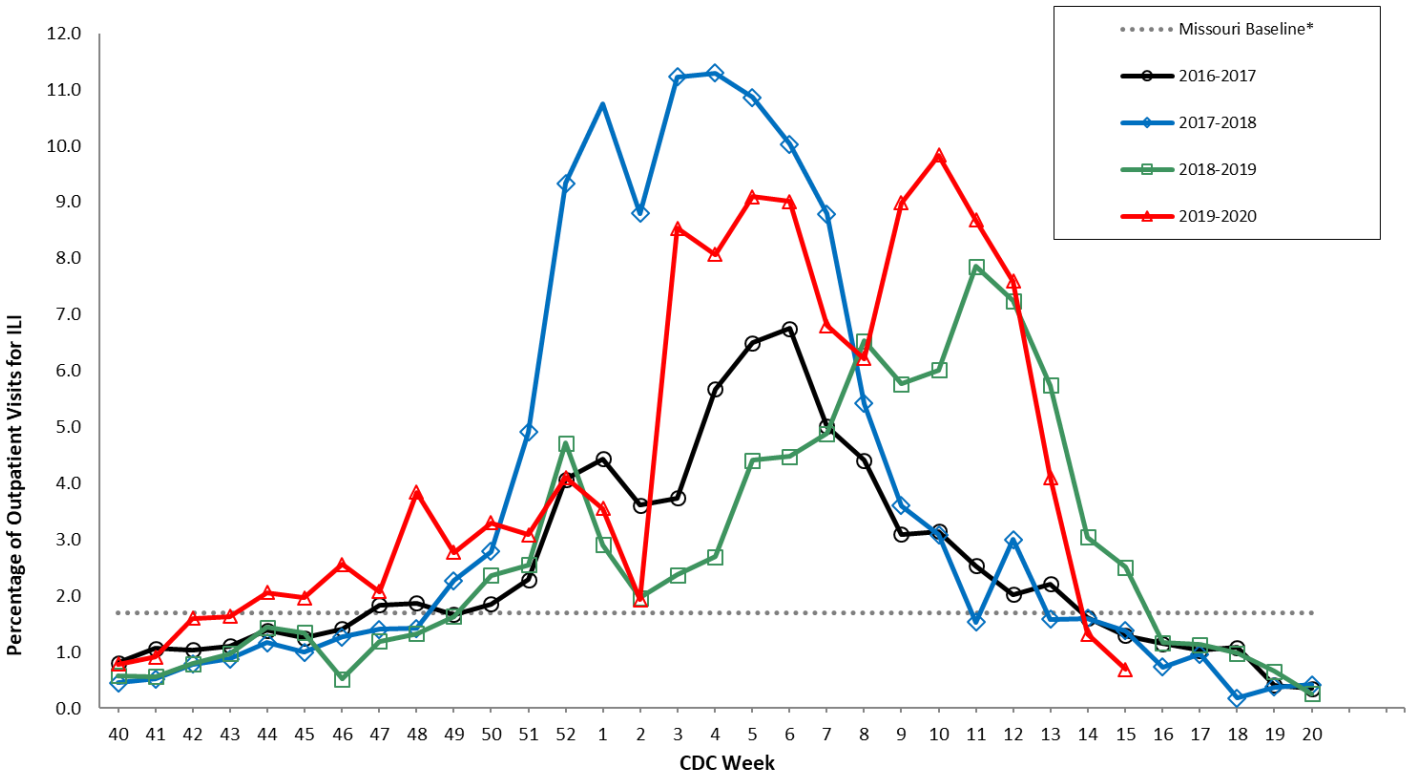
[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
[‡]Incidence Rate per 100,000 population

Figure 4. Number of Laboratory-positive[†] Influenza Cases by CDC Week, Missouri, 2016-2020[*]



[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).Data Source: Missouri Health Information Surveillance System (WebSurv).

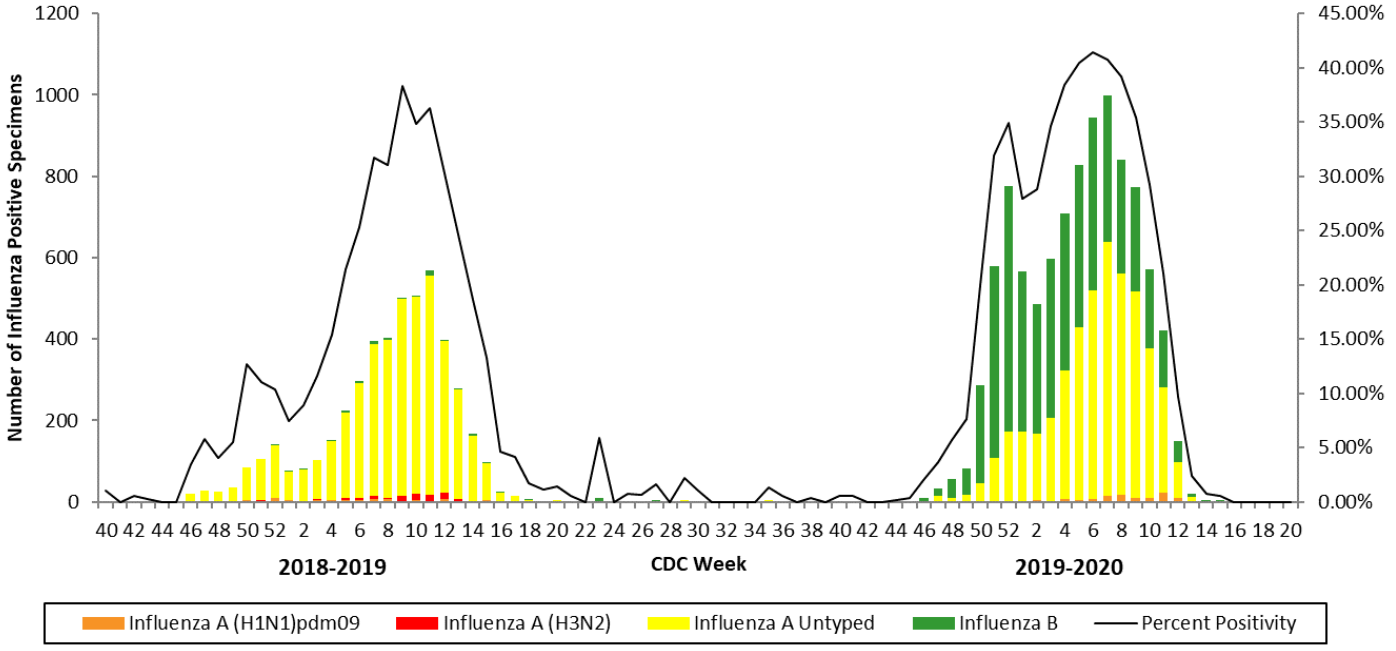
Figure 5. Percentage of Outpatient Visits for Influenza-like Illness (ILI), Missouri Outpatient ILI Surveillance Network (ILINet) 2016-2020*†



*The ILINet Region 7 (MO, IA, KS, NE) baseline is the mean percentage of patient visits for ILI during non-influenza weeks for the previous three seasons, plus two standard deviations. A non-influenza week is defined as periods of two or more consecutive weeks in which each week accounted for less than 2% of the season's total number of specimens that tested positive for influenza. Data Source: U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Centers for Disease Control and Prevention (CDC).

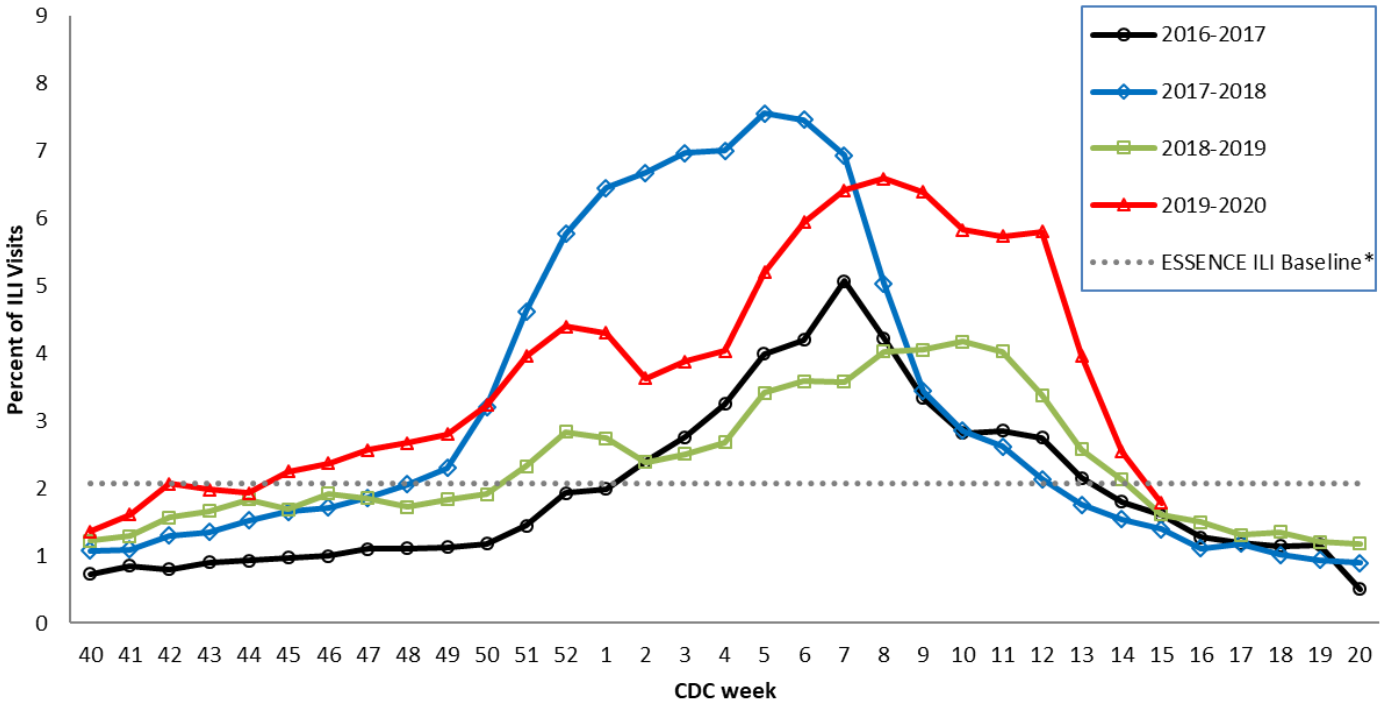
†2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).

Figure 6. Season-to-Date PCR (+) Tests for Influenza in Missouri



Data Source: National Respiratory and Enteric Virus Surveillance System (NREVSS), Centers for Disease Control and Prevention (CDC).
2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).

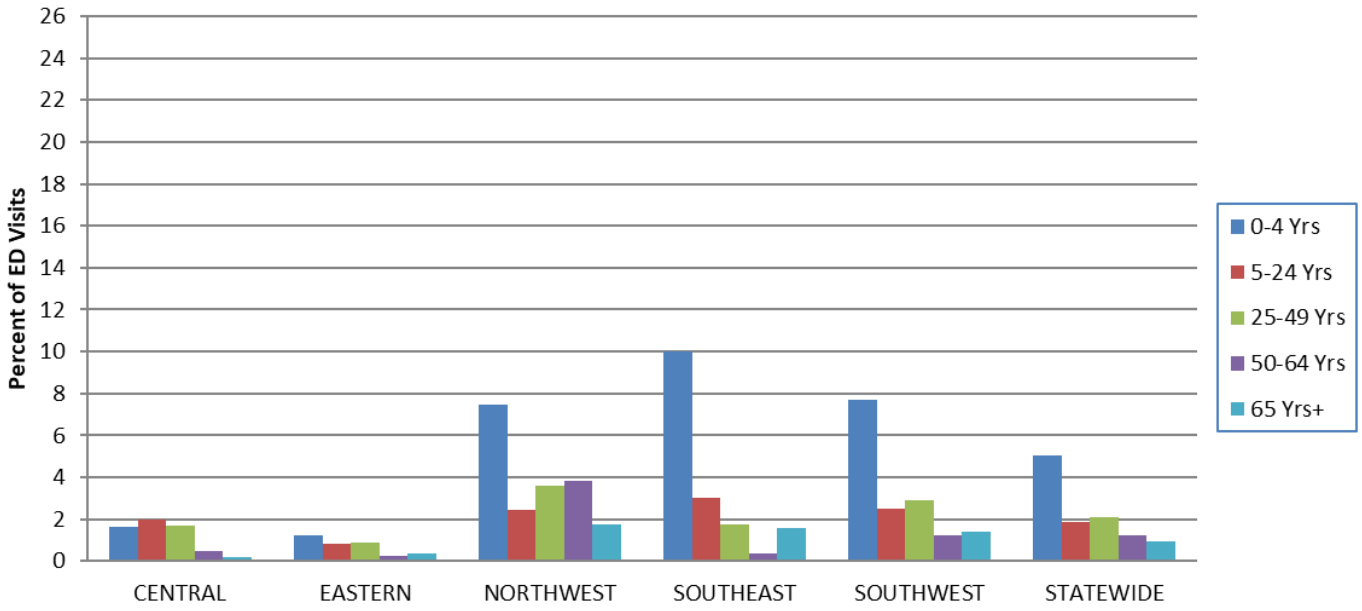
Figure 7. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, 2016-2020 Influenza Seasons*‡



*The ESSENCE ILI Baseline is the mean percent of ILI visits for each week during the previous three years (2016-18) when percentage of ILI visits were less than 2% of total visits, plus two standard deviations. Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.

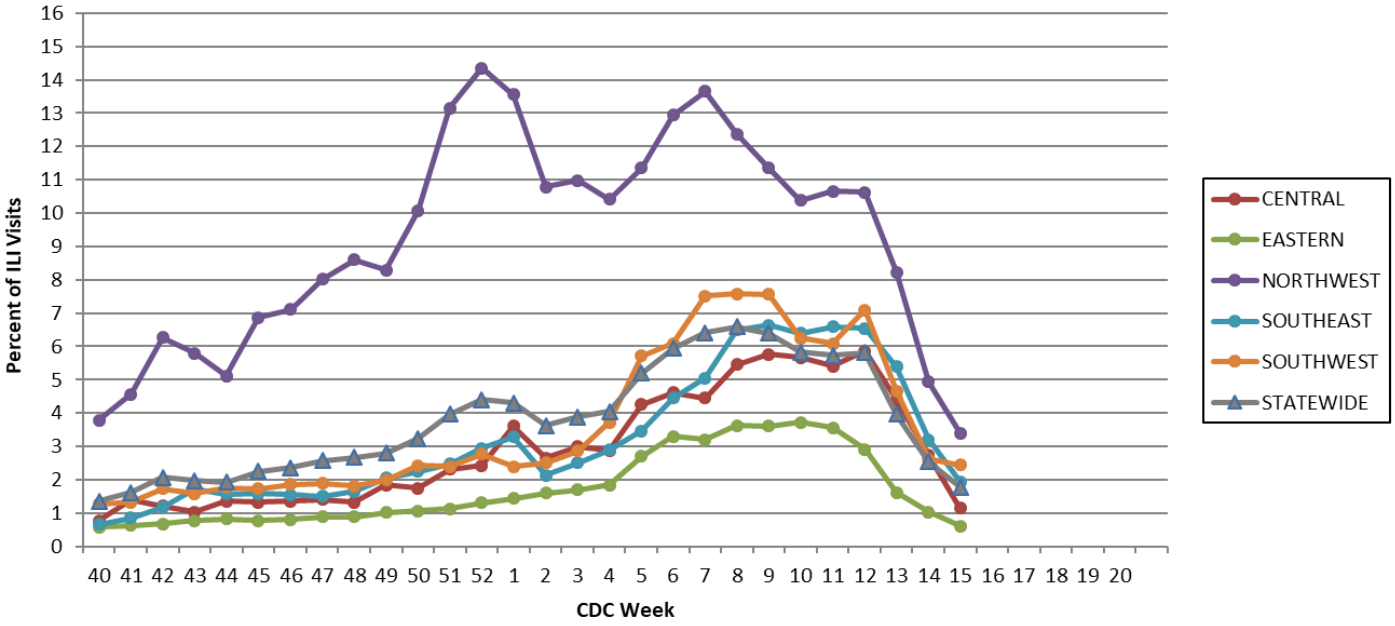
‡The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 8. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Age Group, Region and Statewide, Week 15, 2020*



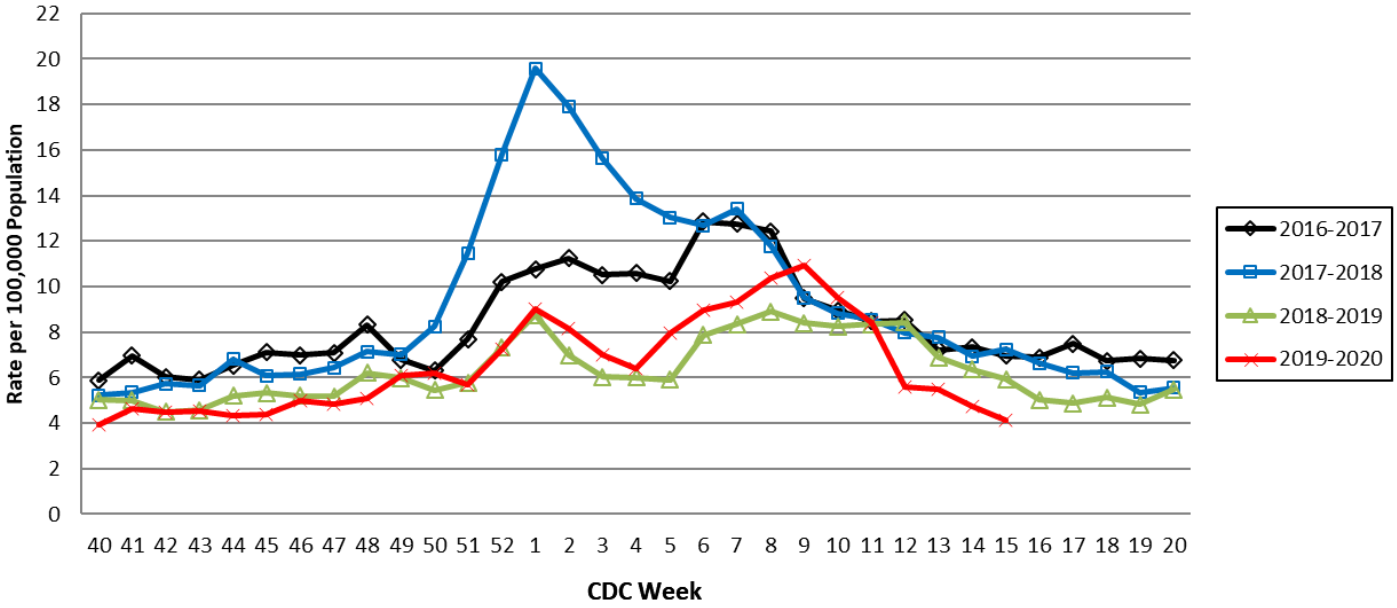
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 9. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Region and Statewide, 2019-2020 Influenza Season*



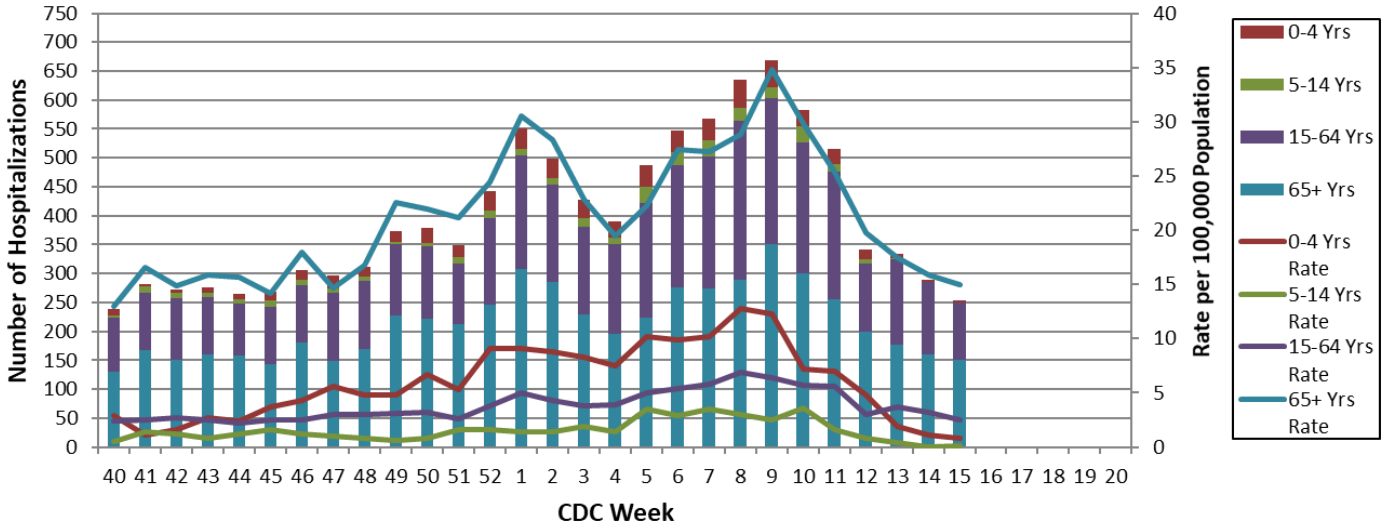
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 10. Weekly Rate of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Missouri Hospitals, 2016-2020 Influenza Seasons



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.
Population data from Missouri Census Data Center 2017 (https://census.missouri.edu).

Figure 11. Number of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Participating Missouri Hospitals, by Age Group, Week 15, 2019-2020 Influenza Season



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.

Additional Influenza Data Sources:

Centers for Disease Control and Prevention: National Influenza Surveillance (FluView):
http://www.cdc.gov/flu/weekly/fluactivitysurv.htm

The National Respiratory and Enteric Virus Surveillance System (NREVSS):
https://www.cdc.gov/surveillance/nrevss/

World Health Organization: International Influenza Surveillance:
http://www.who.int/influenza/surveillance_monitoring/en/

Missouri Weekly Influenza Surveillance Report 2019-2020 Influenza Season[1]

Week 16: April 12, 2020 – April 18, 2020

All data are preliminary and may change as more reports are received.

Summary:

- The estimated influenza activity in Missouri is Sporadic[2].
- A total of 35 laboratory-positive[3] influenza cases (19 influenza A and 16 influenza B) were reported during Week 16. The season-to-date total of laboratory-positive influenza cases is 113,172 (48.5% influenza A, 50.7% influenza B, and 0.8% untyped). The percentage of respiratory specimens testing positive for influenza in Missouri laboratories reporting to the National Respiratory and Enteric Virus Surveillance System (NREVSS) increased slightly during Week 16 (Figure 6). Influenza test results from the Missouri State Public Health Laboratory (MSPHL) are currently not available. The MSPHL has temporarily suspended routine influenza testing in order to divert available resources to COVID-19 testing.
- Influenza-like illness (ILI) activity was below baseline for the Missouri Outpatient ILI Surveillance Network (ILINet) and for the hospital emergency room visit chief complaint data reported through ESSENCE. The reported percentage of visits for ILI was 0.79% (Figure 5) and 1.27% (Figure 7) through ILINet and ESSENCE respectively.[4] The ILI data from a small number of sites located in the Northwest Region of the state is currently unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.
- A season-to-date total of 84 influenza-associated deaths have been reported in Missouri as of Week 16.[5] During Week 15, 111 deaths involving Pneumonia and Influenza (P&I) were reported to the Bureau of Vital Records, resulting in a season-to-date total of 1,652 P&I associated deaths in Missouri.[6]
- Thirteen influenza outbreaks and eight school closures have been reported in Missouri as of Week 16.
- Seasonal influenza activity as reported by clinical laboratories in the United States was low during Week 15. Influenza-like illness activity, while lower than previous week, is still elevated. National influenza surveillance information is prepared by CDC and is included in the weekly FluView report, which is available online at http://www.cdc.gov/flu/weekly/fluactivitysurv.htm.

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[1]The 2019-2020 influenza season begins CDC Week 40 (week ending October 5, 2019) and ends CDC Week 39 (week ending September 26, 2020).

[2]Sporadic is defined as: Small numbers of laboratory-confirmed influenza cases or a single laboratory-confirmed influenza outbreak has been reported, but there is no increase in cases of ILI.

[3]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.

[4]Influenza-like illness (ILI) is defined by ILINet as fever (temperature of 100°F [37.8°C] or greater) and a cough and/or a sore throat without a known cause other than influenza. ILI is defined by ESSENCE as Emergency Department chief complaints for Influenza or (FeverPlus and (Cough or SoreThroat) and not NonILIFevers).

[5]All influenza-associated deaths became reportable in Missouri in 2016. These reports are verified by local public health agencies and DHSS.

[6]The P&I data are obtained from vital statistics data using ICD-10 codes, which are available one week later. The P&I data for the CDC Week provided is the most current data available.

Surveillance Data:

Interactive Maps

The jurisdiction-specific influenza data are provided though interactive maps available at http://bit.ly/moflu19. *Click on the jurisdiction to view the influenza data specific to that jurisdiction.*

- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, CDC Week 16**
- **Reported Week-specific Rate per 100,000 Population, CDC Week 16**
- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, Season-to-Date**
- **Reported Rate per 100,000 Population, Season-to-Date**

Data Figures

Figure 1. Number of Laboratory-positive† Influenza Cases by Influenza Type, Missouri, CDC Week 16 (April 12, 2020 – April 18, 2020)*

Influenza Type	Week 14	Week 15	Week 16	2019-2020* Season-to-Date
Influenza A	203	76	19	54,926
Influenza B	196	72	16	57,382
Influenza Unknown Or Untyped	2	0	0	864
Total	401	148	35	113,172

†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv).

Figure 2. Number of Laboratory-positive† Influenza Cases and Case Rates by Age Group, Missouri, CDC Week 16 (April 12, 2020 – April 18, 2020)*‡

Age Group	Week 16 Cases	Week 16 Rate‡	2019-2020* Season-to-Date	2019-2020* Season-to-Date Rate‡
00-04	9	2.40	19,512	5,212.10
05-24	6	0.37	49,406	3,079.19
25-49	7	0.37	26,877	1,404.60
50-64	4	0.32	10,756	869.96
65+	9	0.94	6,620	693.25
Total	35	0.58	113,172	1,860.26

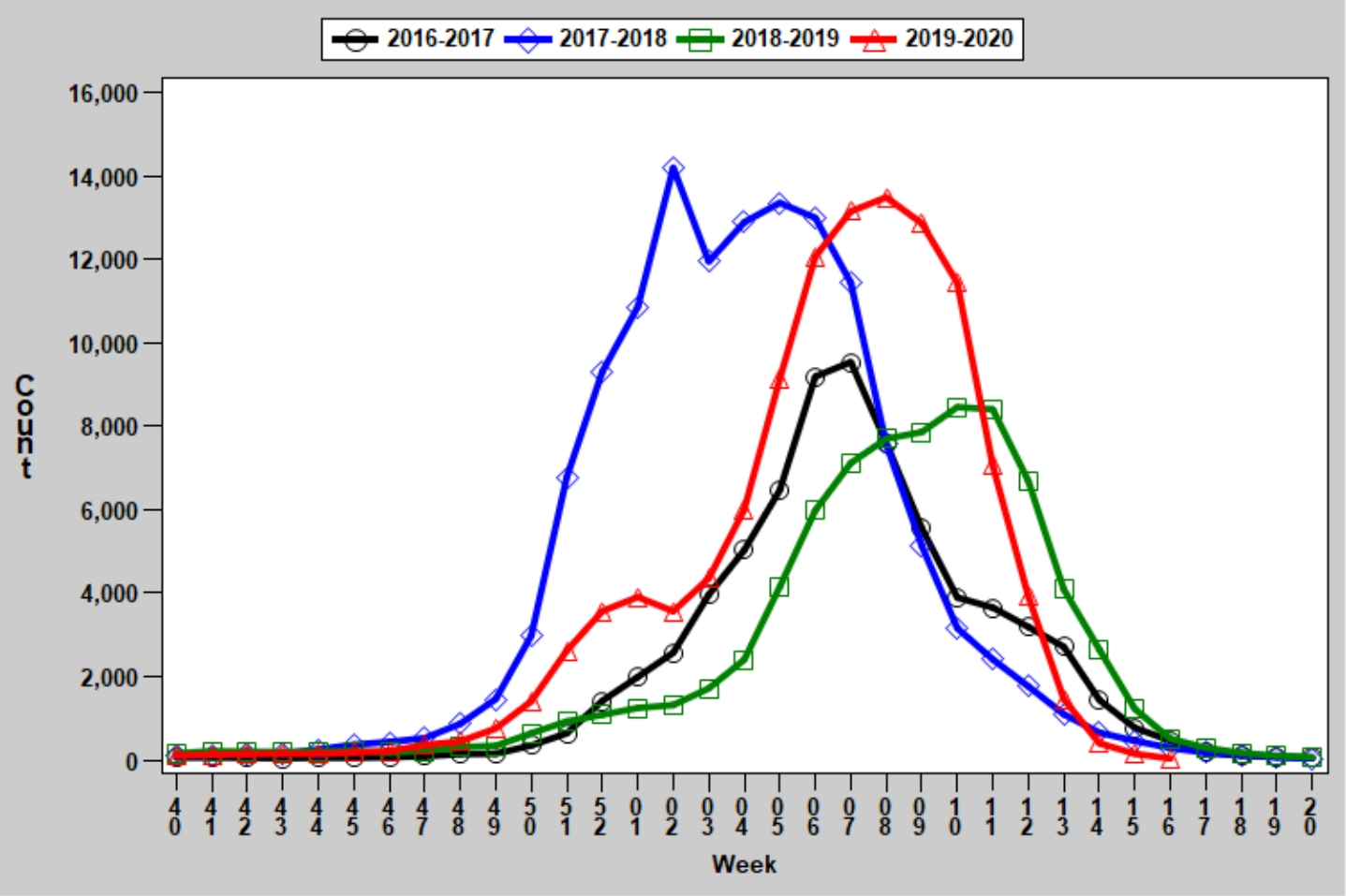
†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
‡Incidence Rate per 100,000 population

Figure 3. Number of Laboratory-positive[†] Influenza Cases and Case Rates by Region, Missouri, CDC Week 16 (April 12, 2020 – April 18, 2020)[*‡]

Region	Week 16 Cases	Week 16 Rate[‡]	2019-2020* Season-to-Date	2019-2020* Season-to-Date Rate[‡]
Central	3	0.44	15,071	2,226.15
Eastern	24	1.06	31,698	1,398.76
Northwest	2	0.13	33,049	2,068.77
Southeast	4	0.85	12,711	2,694.73
Southwest	2	0.19	20,643	1,926.91
Total	35	0.58	113,172	1,860.26

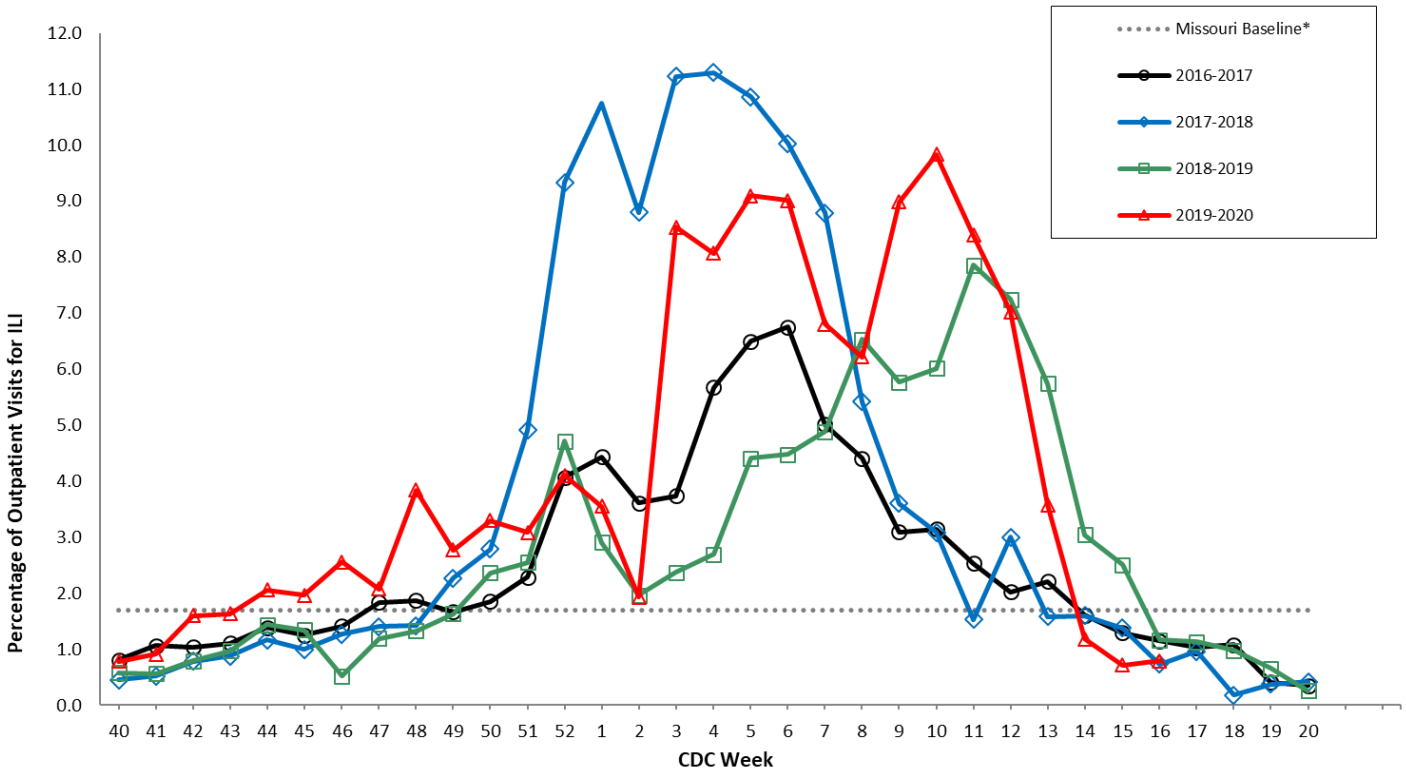
[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
[‡]Incidence Rate per 100,000 population

Figure 4. Number of Laboratory-positive[†] Influenza Cases by CDC Week, Missouri, 2016-2020[*]



[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).Data Source: Missouri Health Information Surveillance System (WebSurv).

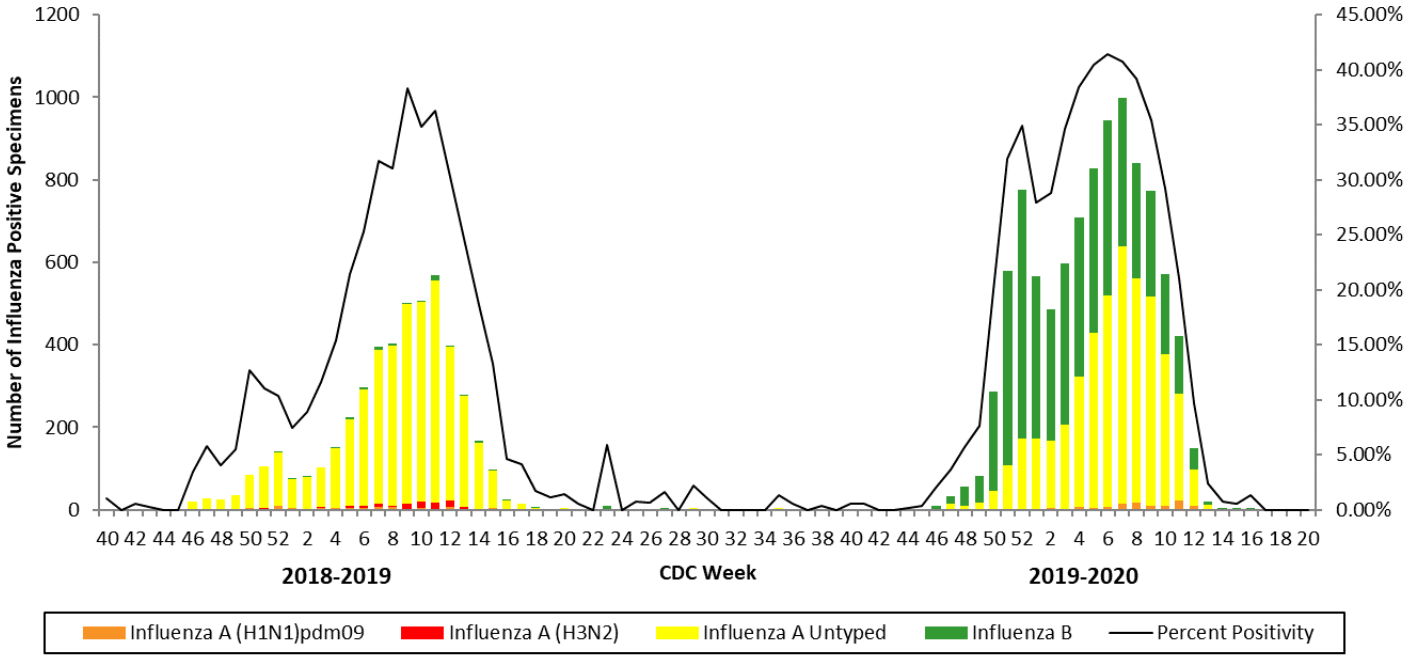
Figure 5. Percentage of Outpatient Visits for Influenza-like Illness (ILI), Missouri Outpatient ILI Surveillance Network (ILINet) 2016-2020*†



*The ILINet Region 7 (MO, IA, KS, NE) baseline is the mean percentage of patient visits for ILI during non-influenza weeks for the previous three seasons, plus two standard deviations. A non-influenza week is defined as periods of two or more consecutive weeks in which each week accounted for less than 2% of the season's total number of specimens that tested positive for influenza. Data Source: U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Centers for Disease Control and Prevention (CDC).

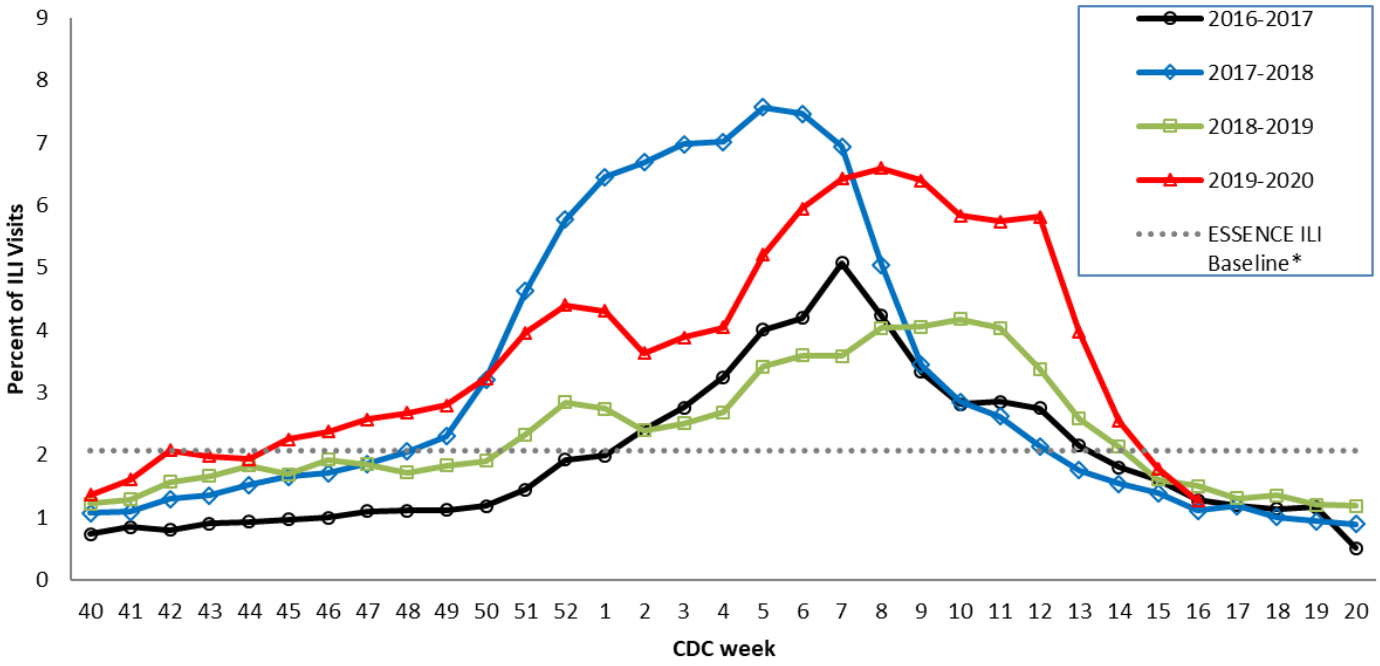
†2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).

Figure 6. Season-to-Date PCR (+) Tests for Influenza in Missouri



Data Source: National Respiratory and Enteric Virus Surveillance System (NREVSS), Centers for Disease Control and Prevention (CDC). 2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).

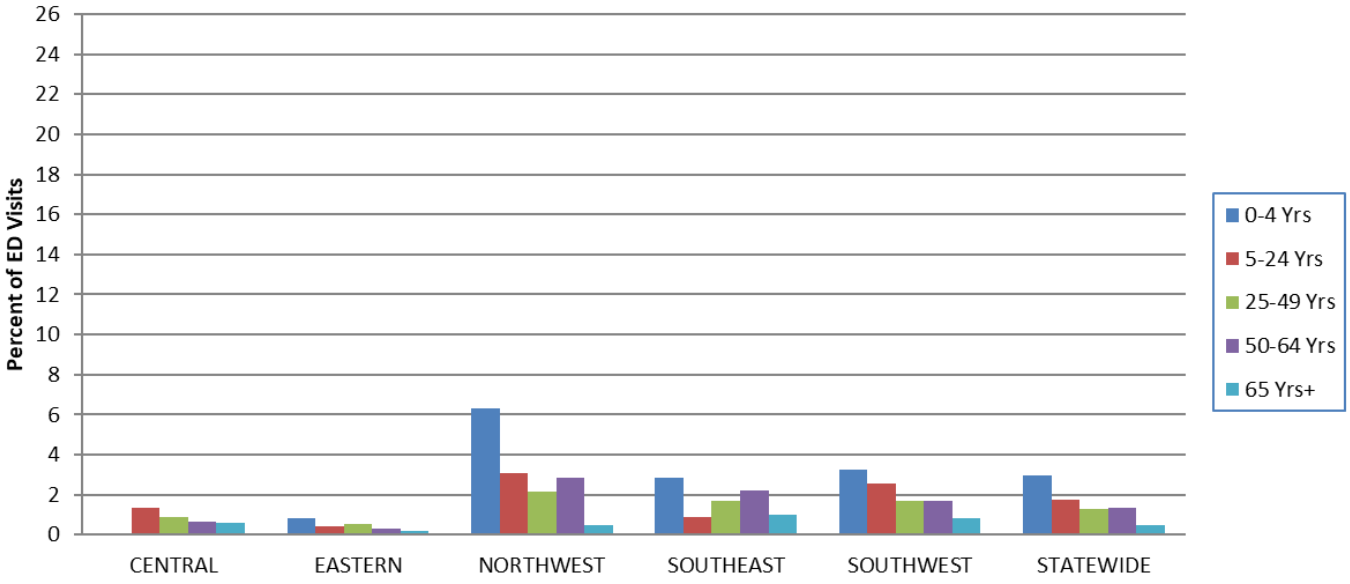
Figure 7. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, 2016-2020 Influenza Seasons*‡



*The ESSENCE ILI Baseline is the mean percent of ILI visits for each week during the previous three years (2016-18) when percentage of ILI visits were less than 2% of total visits, plus two standard deviations. Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.

‡The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 8. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Age Group, Region and Statewide, Week 16, 2020*



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
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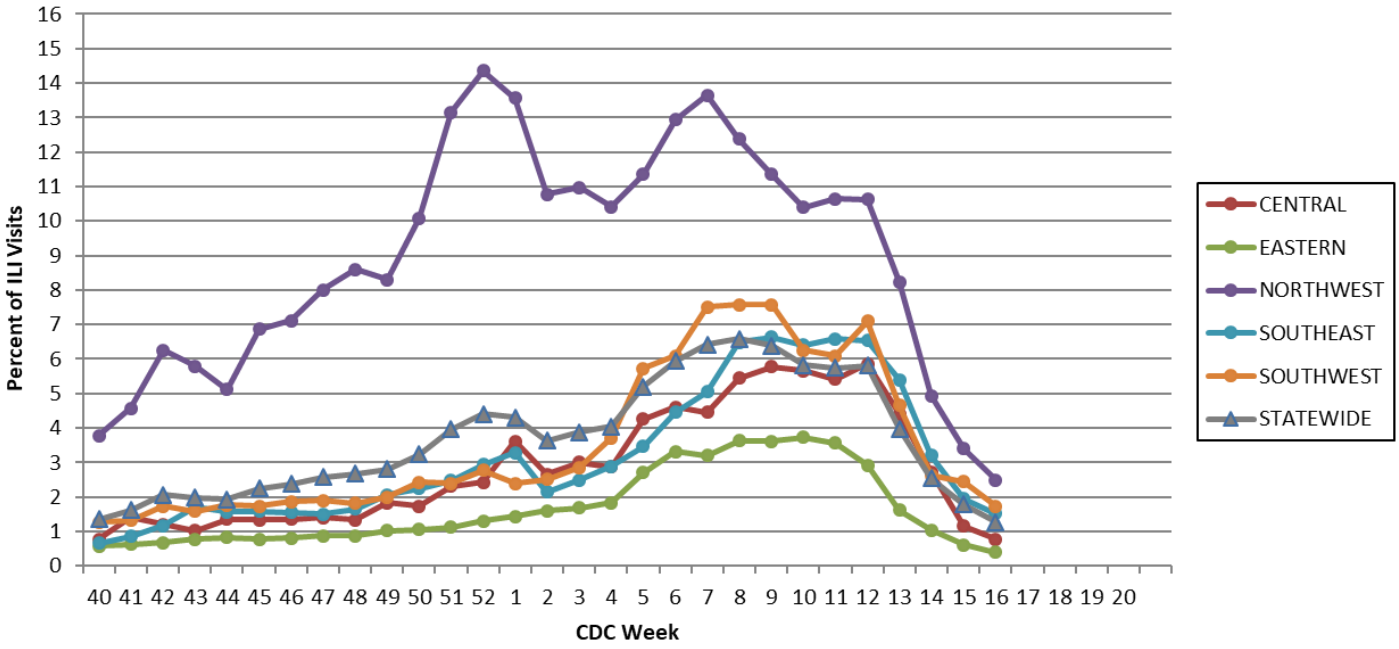
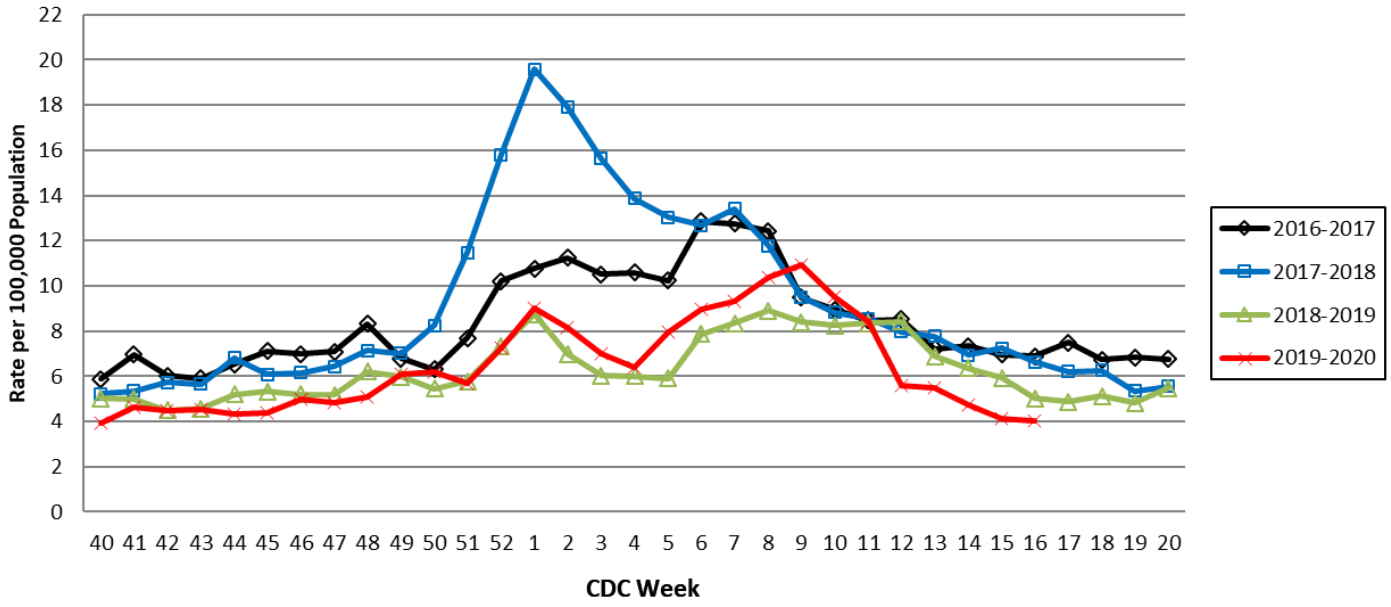
Figure 9. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Region and Statewide, 2019-2020 Influenza Season*



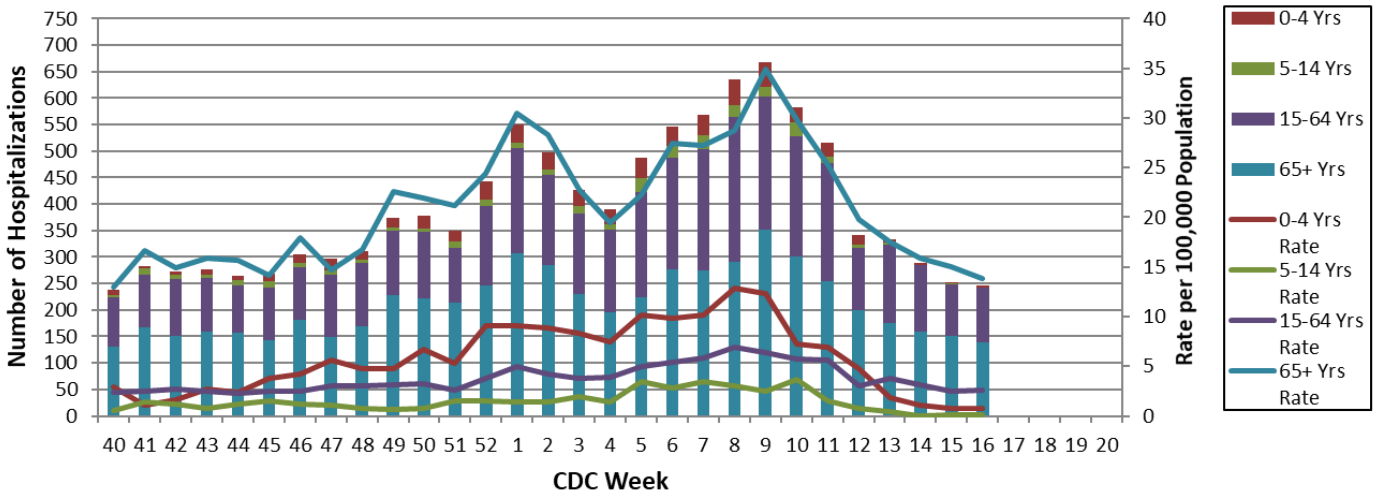
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 10. Weekly Rate of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Missouri Hospitals, 2016-2020 Influenza Seasons



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.
Population data from Missouri Census Data Center 2017 (https://census.missouri.edu).

Figure 11. Number of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Participating Missouri Hospitals, by Age Group, Week 16, 2019-2020 Influenza Season



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.

Additional Influenza Data Sources:

Centers for Disease Control and Prevention: National Influenza Surveillance (FluView):
http://www.cdc.gov/flu/weekly/fluactivitysurv.htm

The National Respiratory and Enteric Virus Surveillance System (NREVSS):
https://www.cdc.gov/surveillance/nrevss/

World Health Organization: International Influenza Surveillance:
http://www.who.int/influenza/surveillance_monitoring/en/

Missouri Weekly Influenza Surveillance Report 2019-2020 Influenza Season[1]

Week 17: April 19, 2020 – April 25, 2020

All data are preliminary and may change as more reports are received.

Summary:

- The estimated influenza activity in Missouri is Sporadic[2].
- A total of 28 laboratory-positive[3] influenza cases (14 influenza, 10 influenza B, and 4 untyped) were reported during Week 17. The season-to-date total of laboratory-positive influenza cases is 113,304 (48.5% influenza A, 50.7% influenza B, and 0.8% untyped). The percentage of respiratory specimens testing positive for influenza in Missouri laboratories reporting to the National Respiratory and Enteric Virus Surveillance System (NREVSS) decreased during Week 17 (Figure 6). Influenza test results from the Missouri State Public Health Laboratory (MSPHL) are currently not available. The MSPHL has temporarily suspended routine influenza testing in order to divert available resources to COVID-19 testing.
- Influenza-like illness (ILI) activity was below baseline for the Missouri Outpatient ILI Surveillance Network (ILINet) and for the hospital emergency room visit chief complaint data reported through ESSENCE. The reported percentage of visits for ILI was 0.33% (Figure 5) and 0.94% (Figure 7) through ILINet and ESSENCE respectively.[4] The ILI data from a small number of sites located in the Northwest Region of the state is currently unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.
- A season-to-date total of 93 influenza-associated deaths have been reported in Missouri as of Week 17.[5] During Week 16, 110 deaths involving Pneumonia and Influenza (P&I) were reported to the Bureau of Vital Records, resulting in a season-to-date total of 1,762 P&I associated deaths in Missouri.[6]
- Thirteen influenza outbreaks and eight school closures have been reported in Missouri as of Week 17.
- Seasonal influenza activity as reported by clinical laboratories in the United States was low during Week 16. Influenza-like illness activity continued to decrease and is below the national baseline. National influenza surveillance information is prepared by CDC and is included in the weekly FluView report, which is available online at http://www.cdc.gov/flu/weekly/fluactivitysurv.htm.

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[1]The 2019-2020 influenza season begins CDC Week 40 (week ending October 5, 2019) and ends CDC Week 39 (week ending September 26, 2020).

[2]Sporadic is defined as: Small numbers of laboratory-confirmed influenza cases or a single laboratory-confirmed influenza outbreak has been reported, but there is no increase in cases of ILI.

[3]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.

[4]Influenza-like illness (ILI) is defined by ILINet as fever (temperature of 100°F [37.8°C] or greater) and a cough and/or a sore throat without a known cause other than influenza. ILI is defined by ESSENCE as Emergency Department chief complaints for Influenza or (FeverPlus and (Cough or SoreThroat) and not NonILIFevers).

[5]All influenza-associated deaths became reportable in Missouri in 2016. These reports are verified by local public health agencies and DHSS.

[6]The P&I data are obtained from vital statistics data using ICD-10 codes, which are available one week later. The P&I data for the CDC Week provided is the most current data available.

Surveillance Data:

Interactive Maps

The jurisdiction-specific influenza data are provided though interactive maps available at http://bit.ly/moflu19. *Click on the jurisdiction to view the influenza data specific to that jurisdiction.*

- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, CDC Week 17**
- **Reported Week-specific Rate per 100,000 Population, CDC Week 17**
- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, Season-to-Date**
- **Reported Rate per 100,000 Population, Season-to-Date**

Data Figures

Figure 1. Number of Laboratory-positive† Influenza Cases by Influenza Type, Missouri, CDC Week 17 (April 19, 2020 – April 25, 2020)*

Influenza Type	Week 15	Week 16	Week 17	2019-2020* Season-to-Date
Influenza A	76	24	14	
Influenza B	74	19	10	57,437
Influenza Unknown Or Untyped	0	0	4	867
Total	150	43	28	113,304

†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv).

Figure 2. Number of Laboratory-positive† Influenza Cases and Case Rates by Age Group, Missouri, CDC Week 17 (April 19, 2020 – April 25, 2020)*‡

Age Group	Week 17 Cases	Week 17 Rate‡	2019-2020* Season-to-Date	2019-2020* Season-to-Date Rate‡
00-04	1	0.27	19,533	5,217.70
05-24	1	0.06	49,444	3,081.55
25-49	6	0.31	26,900	1,405.80
50-64	10	0.81	10,786	872.39
65+	10	1.05	6,640	695.34
Total	28	0.46	113,304	1,862.43

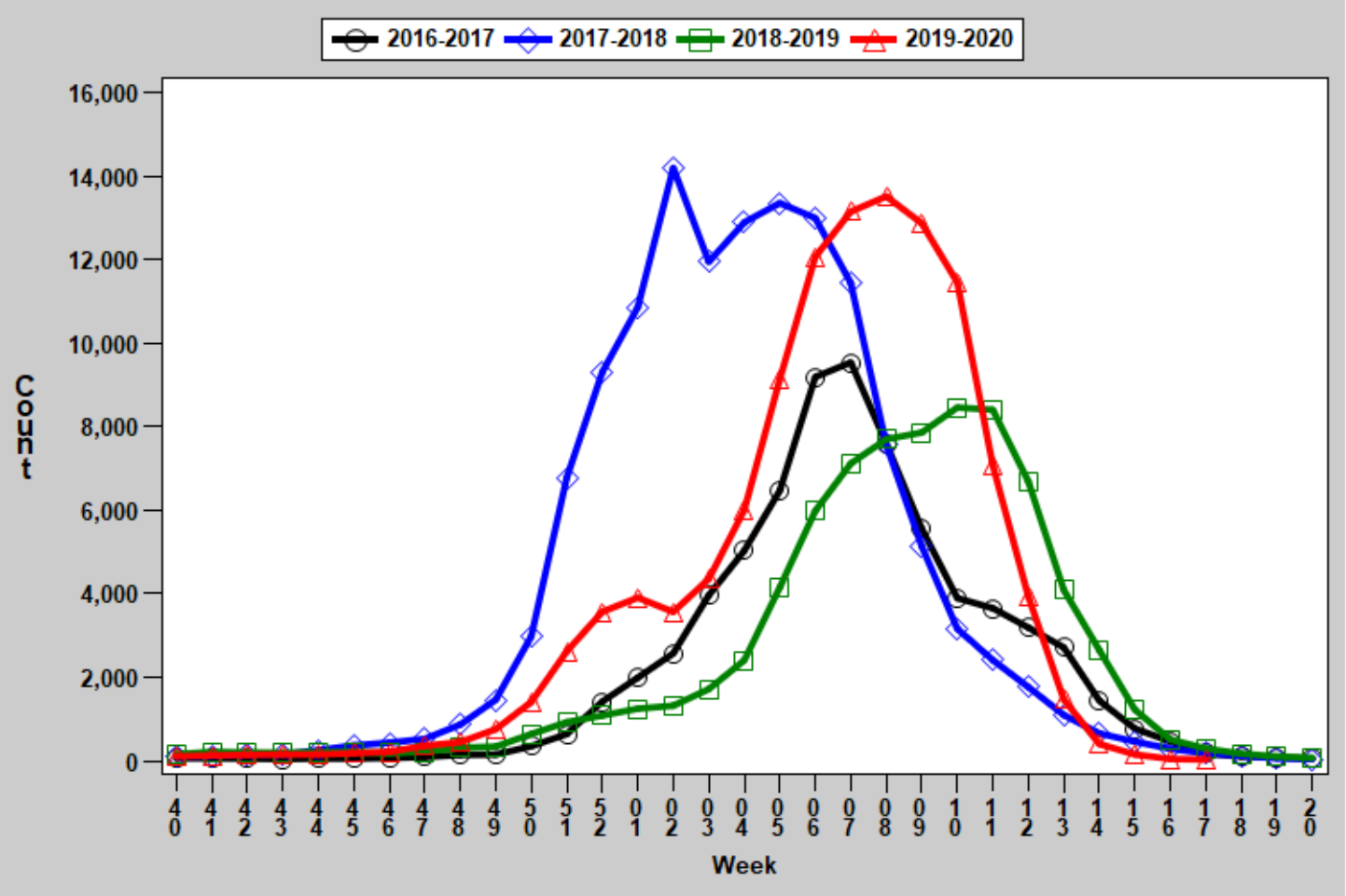
†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
‡Incidence Rate per 100,000 population

Figure 3. Number of Laboratory-positive[†] Influenza Cases and Case Rates by Region, Missouri, CDC Week 17 (April 19, 2020 – April 25, 2020)[*‡]

Region	Week 17 Cases	Week 17 Rate[‡]	2019-2020* Season-to-Date	2019-2020* Season-to-Date Rate[‡]
Central	5	0.74	15,080	2,227.48
Eastern	9	0.40	31,708	1,399.20
Northwest	7	0.44	33,150	2,075.09
Southeast	3	0.64	12,717	2,696.00
Southwest	4	0.37	20,649	1,927.47
Total	28	0.46	113,304	1,862.43

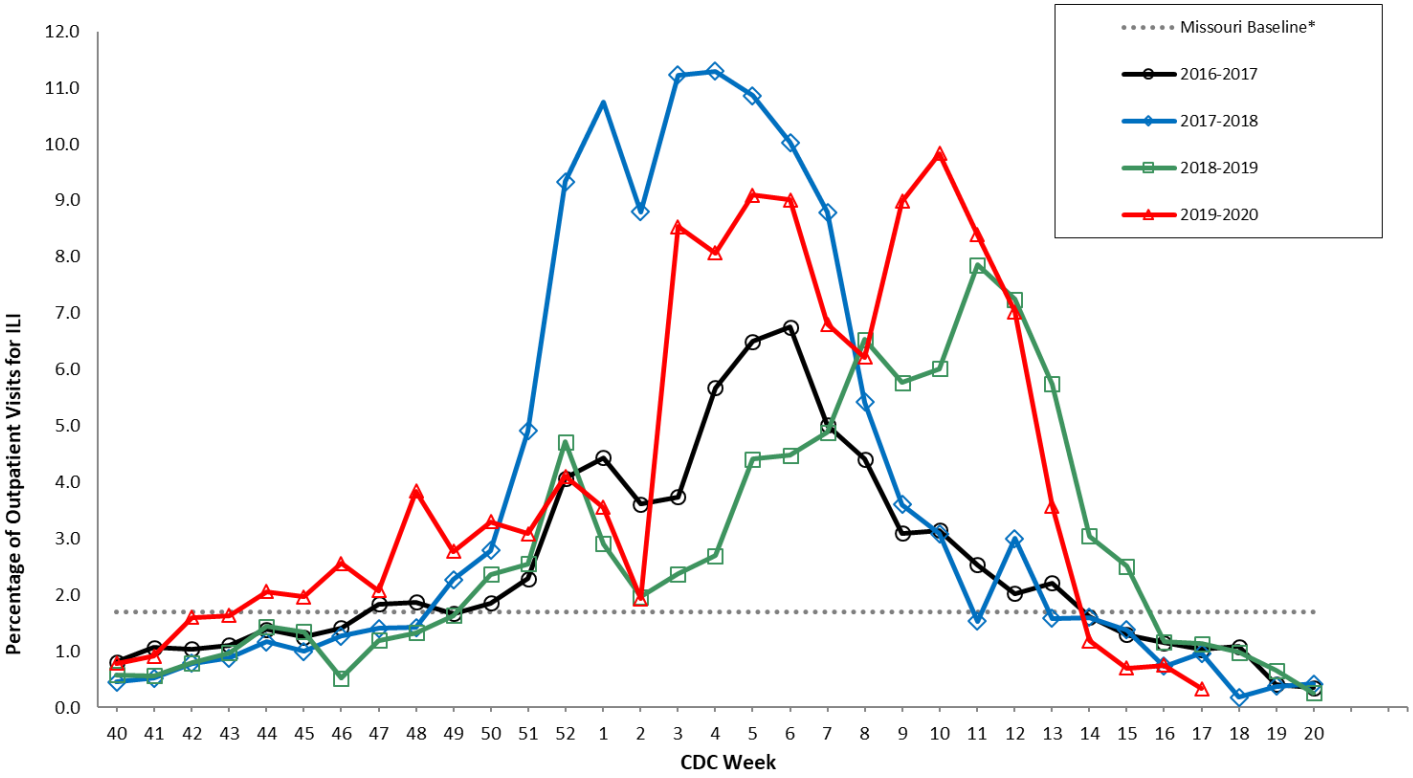
[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
[‡]Incidence Rate per 100,000 population

Figure 4. Number of Laboratory-positive[†] Influenza Cases by CDC Week, Missouri, 2016-2020[*]



[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).Data Source: Missouri Health Information Surveillance System (WebSurv).

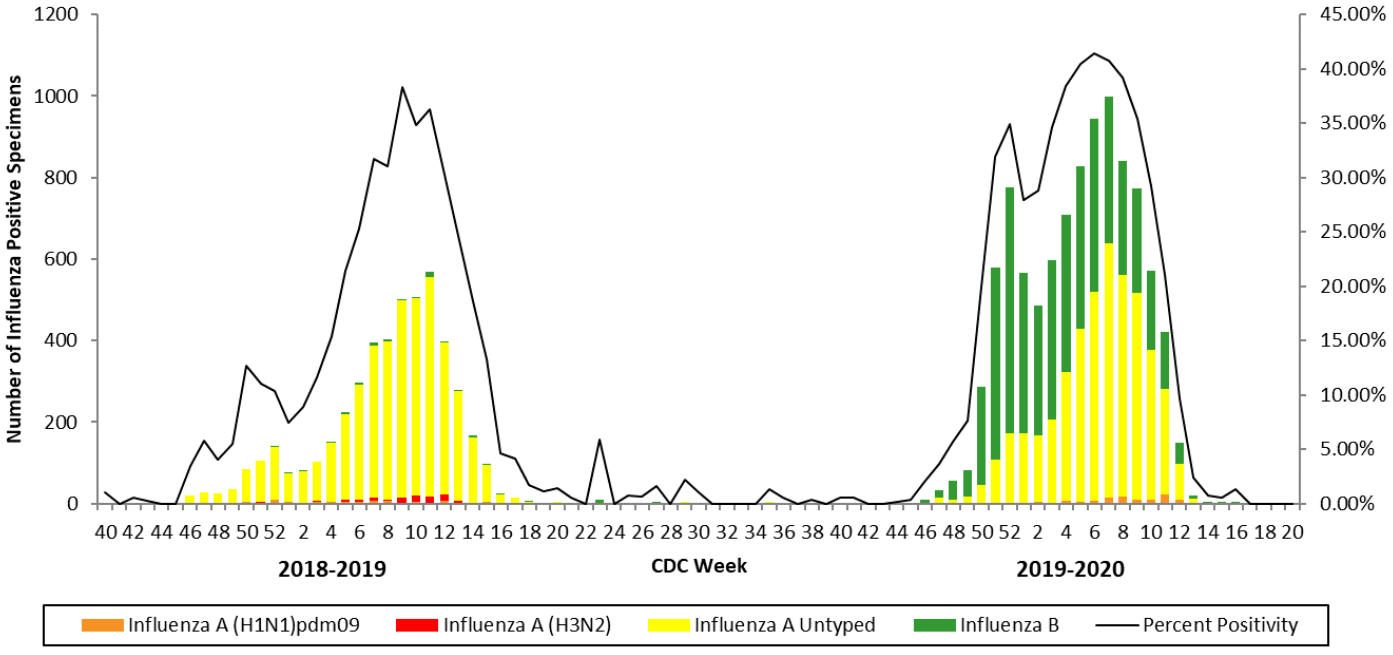
Figure 5. Percentage of Outpatient Visits for Influenza-like Illness (ILI), Missouri Outpatient ILI Surveillance Network (ILINet) 2016-2020*†



*The ILINet Region 7 (MO, IA, KS, NE) baseline is the mean percentage of patient visits for ILI during non-influenza weeks for the previous three seasons, plus two standard deviations. A non-influenza week is defined as periods of two or more consecutive weeks in which each week accounted for less than 2% of the season's total number of specimens that tested positive for influenza. Data Source: U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Centers for Disease Control and Prevention (CDC).

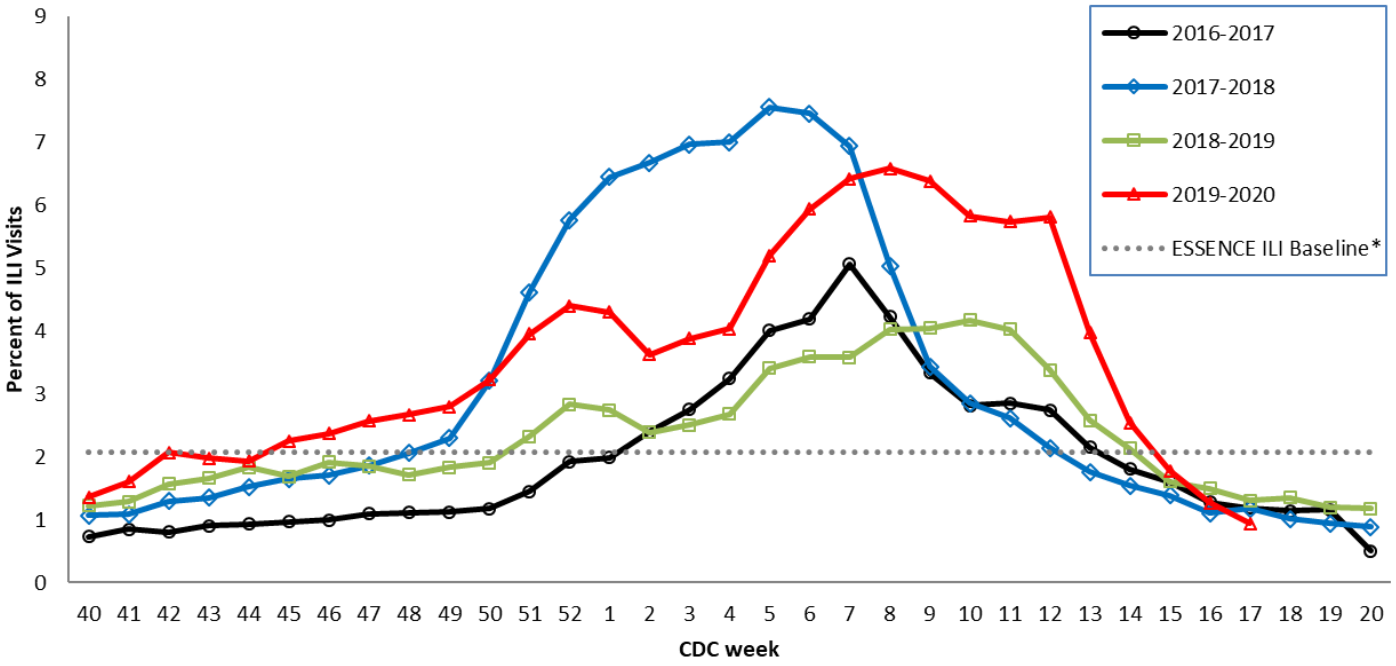
†2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).

Figure 6. Season-to-Date PCR (+) Tests for Influenza in Missouri



Data Source: National Respiratory and Enteric Virus Surveillance System (NREVSS), Centers for Disease Control and Prevention (CDC).
2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).

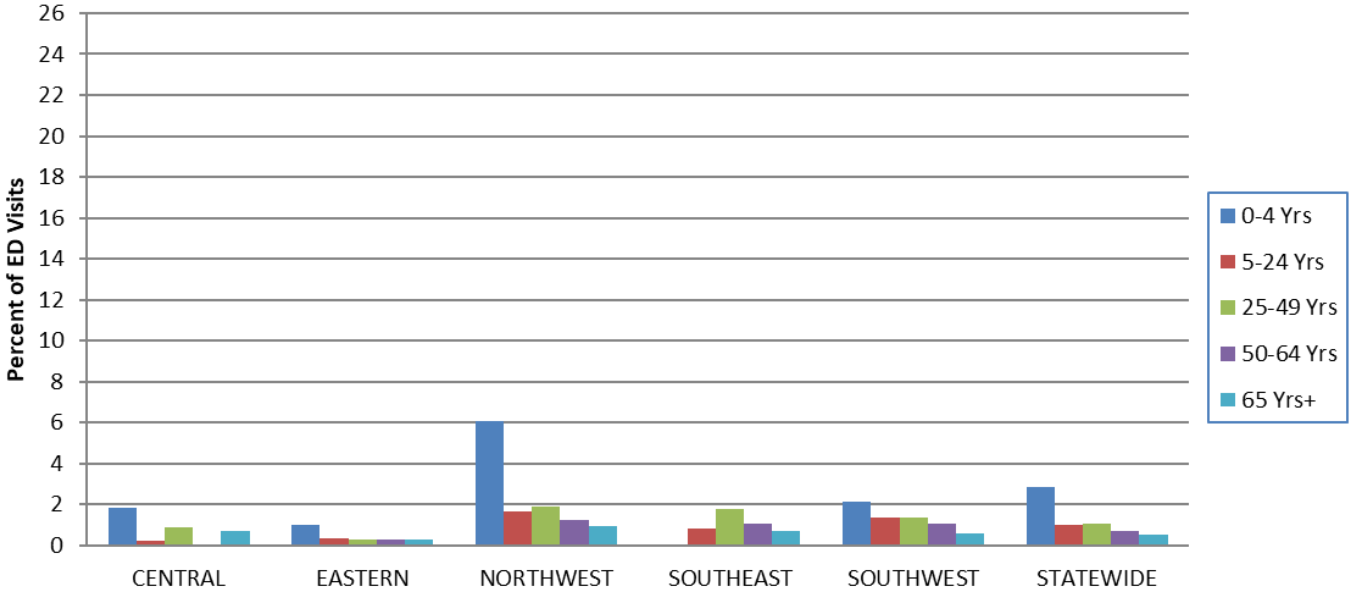
Figure 7. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, 2016-2020 Influenza Seasons*‡



*The ESSENCE ILI Baseline is the mean percent of ILI visits for each week during the previous three years (2016-18) when percentage of ILI visits were less than 2% of total visits, plus two standard deviations. Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.

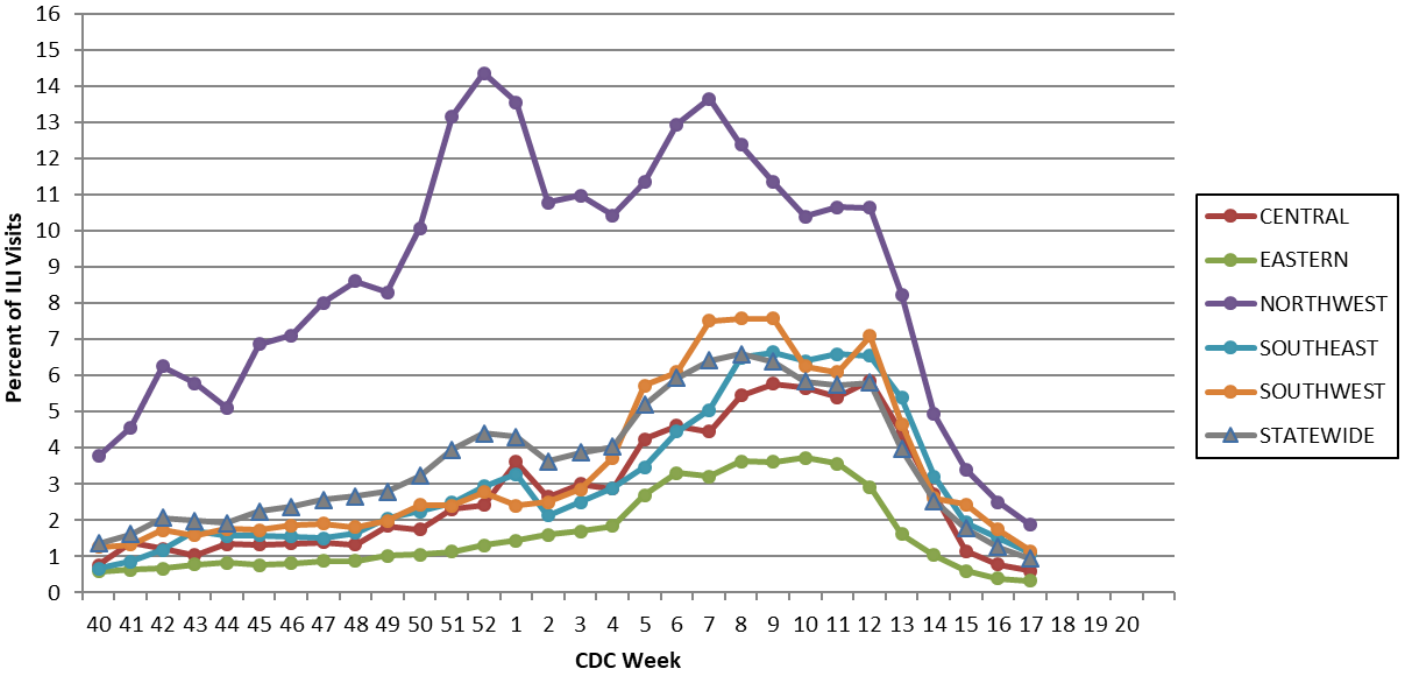
‡The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 8. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Age Group, Region and Statewide, Week 17, 2020*



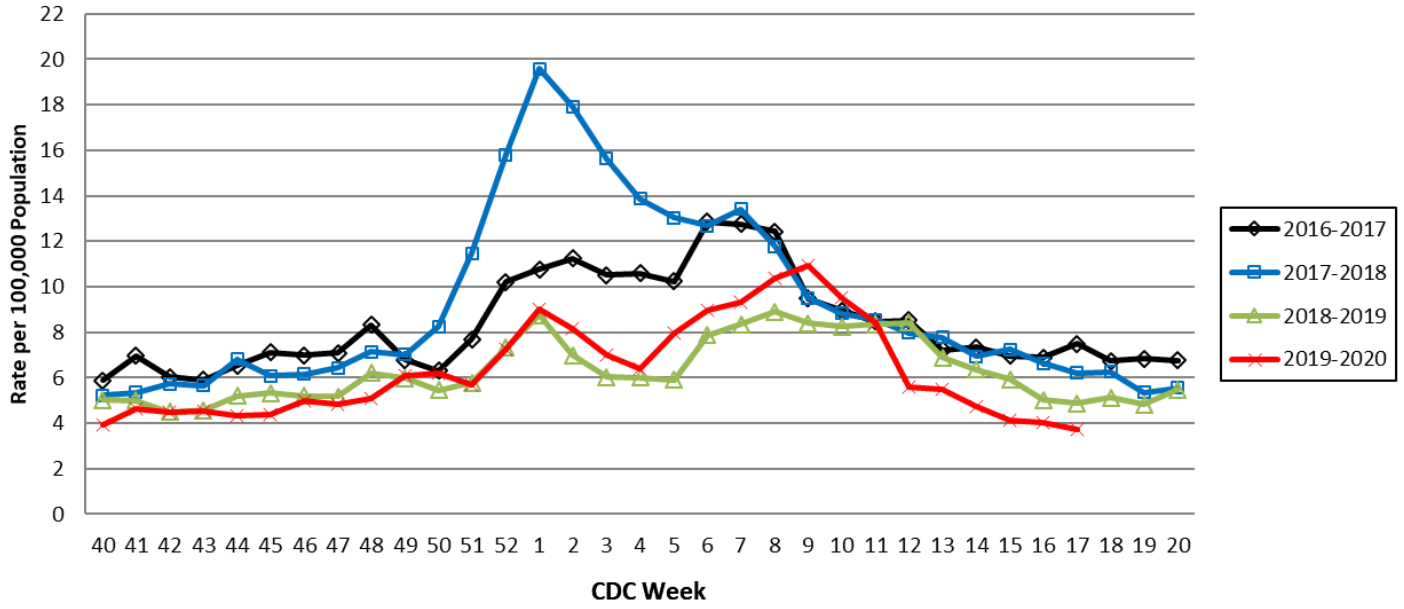
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 9. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Region and Statewide, 2019-2020 Influenza Season*



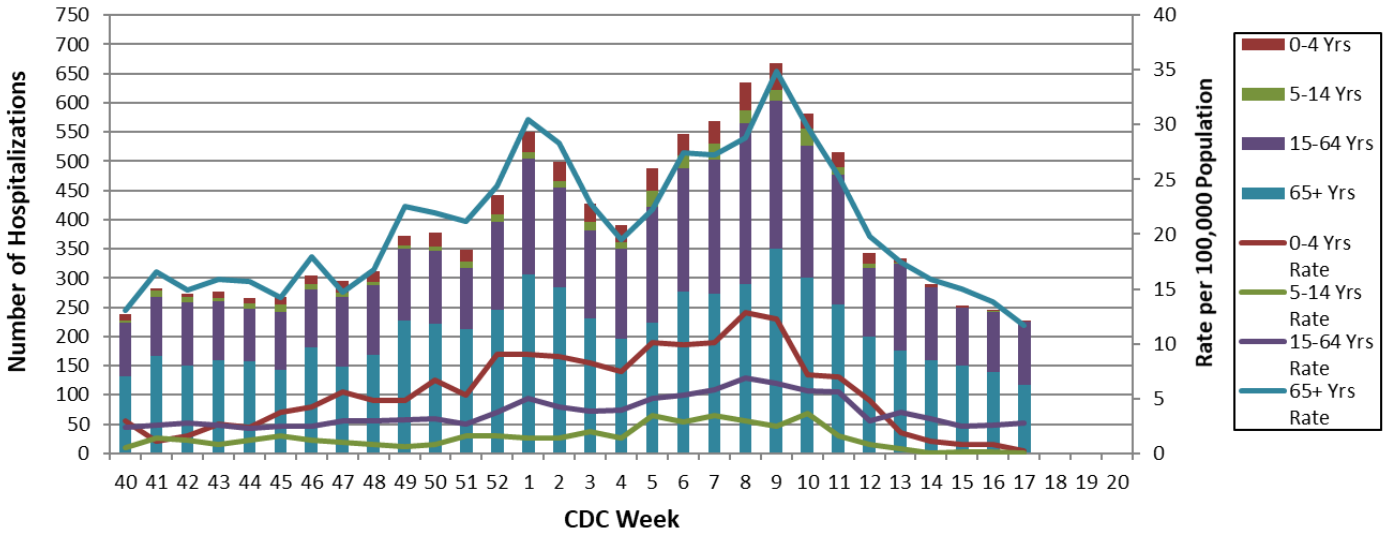
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 10. Weekly Rate of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Missouri Hospitals, 2016-2020 Influenza Seasons



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.
Population data from Missouri Census Data Center 2017 (https://census.missouri.edu).

Figure 11. Number of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Participating Missouri Hospitals, by Age Group, Week 17, 2019-2020 Influenza Season



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.

Additional Influenza Data Sources:

Centers for Disease Control and Prevention: National Influenza Surveillance (FluView):
http://www.cdc.gov/flu/weekly/fluactivitysurv.htm

The National Respiratory and Enteric Virus Surveillance System (NREVSS):
https://www.cdc.gov/surveillance/nrevss/

World Health Organization: International Influenza Surveillance:
http://www.who.int/influenza/surveillance_monitoring/en/

Missouri Weekly Influenza Surveillance Report
2019-2020 Influenza Season[1]

Week 18: April 26, 2020 – May 2, 2020

All data are preliminary and may change as more reports are received.

Summary:

- The estimated influenza activity in Missouri is Sporadic[2].

- A total of 11 laboratory-positive[3] influenza cases (5 influenza and 6 influenza B) were reported during Week 18. The season-to-date total of laboratory-positive influenza cases is 113,323 (48.5% influenza A, 50.7% influenza B, and 0.8% untyped). The percentage of respiratory specimens testing positive for influenza in Missouri laboratories reporting to the National Respiratory and Enteric Virus Surveillance System (NREVSS) decreased during Week 18 (Figure 6). Influenza test results from the Missouri State Public Health Laboratory (MSPHL) are currently not available. The MSPHL has temporarily suspended routine influenza testing in order to divert available resources to COVID-19 testing.

- Influenza-like illness (ILI) activity was below baseline for the Missouri Outpatient ILI Surveillance Network (ILINet) and for the hospital emergency room visit chief complaint data reported through ESSENCE. The reported percentage of visits for ILI was 0.93% (Figure 5) and 0.84% (Figure 7) through ILINet and ESSENCE respectively.[4] The ILI data from a small number of sites located in the Northwest Region of the state is currently unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

- A season-to-date total of 98 influenza-associated deaths have been reported in Missouri as of Week 18.[5] During Week 17, 99 deaths involving Pneumonia and Influenza (P&I) were reported to the Bureau of Vital Records, resulting in a season-to-date total of 1,861 P&I associated deaths in Missouri.[6]

- Thirteen influenza outbreaks and eight school closures have been reported in Missouri as of Week 18.

- Seasonal influenza activity as reported by clinical laboratories in the United States remained low during Week 17. Influenza-like illness activity continued to decrease and is below the national baseline. National influenza surveillance information is prepared by CDC and is included in the weekly FluView report, which is available online at http://www.cdc.gov/flu/weekly/fluactivitysurv.htm.

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[1]The 2019-2020 influenza season begins CDC Week 40 (week ending October 5, 2019) and ends CDC Week 39 (week ending September 26, 2020).

[2]Sporadic is defined as: Small numbers of laboratory-confirmed influenza cases or a single laboratory-confirmed influenza outbreak has been reported, but there is no increase in cases of ILI.

[3]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.

[4]Influenza-like illness (ILI) is defined by ILINet as fever (temperature of 100°F [37.8°C] or greater) and a cough and/or a sore throat without a known cause other than influenza. ILI is defined by ESSENCE as Emergency Department chief complaints for Influenza or (FeverPlus and (Cough or SoreThroat) and not NonILIFevers).

[5]All influenza-associated deaths became reportable in Missouri in 2016. These reports are verified by local public health agencies and DHSS.

[6]The P&I data are obtained from vital statistics data using ICD-10 codes, which are available one week later. The P&I data for the CDC Week provided is the most current data available.

Surveillance Data:

Interactive Maps

The jurisdiction-specific influenza data are provided though interactive maps available at http://bit.ly/moflu19. *Click on the jurisdiction to view the influenza data specific to that jurisdiction.*

- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, CDC Week 18**
- **Reported Week-specific Rate per 100,000 Population, CDC Week 18**
- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, Season-to-Date**
- **Reported Rate per 100,000 Population, Season-to-Date**

Data Figures

Figure 1. Number of Laboratory-positive† Influenza Cases by Influenza Type, Missouri, CDC Week 18 (April 26, 2020 – May 2, 2020)*

Influenza Type	Week 16	Week 17	Week 18	2019-2020* Season-to-Date
Influenza A	24	19	5	55,010
Influenza B	19	13	6	57,446
Influenza Unknown Or Untyped	0	4	0	867
Total	43	36	11	113,323

†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv).

Figure 2. Number of Laboratory-positive† Influenza Cases and Case Rates by Age Group, Missouri, CDC Week 18 (April 26, 2020 – May 2, 2020)*‡

Age Group	Week 18 Cases	Week 18 Rate‡	2019-2020* Season-to-Date	2019-2020* Season-to-Date Rate‡
00-04	0	0.00	19,535	5,218.24
05-24	0	0.00	49,447	3,081.74
25-49	5	0.26	26,905	1,406.06
50-64	4	0.32	10,790	872.71
65+	2	0.21	6,645	695.87
Total	11	0.18	113,323	1,862.74

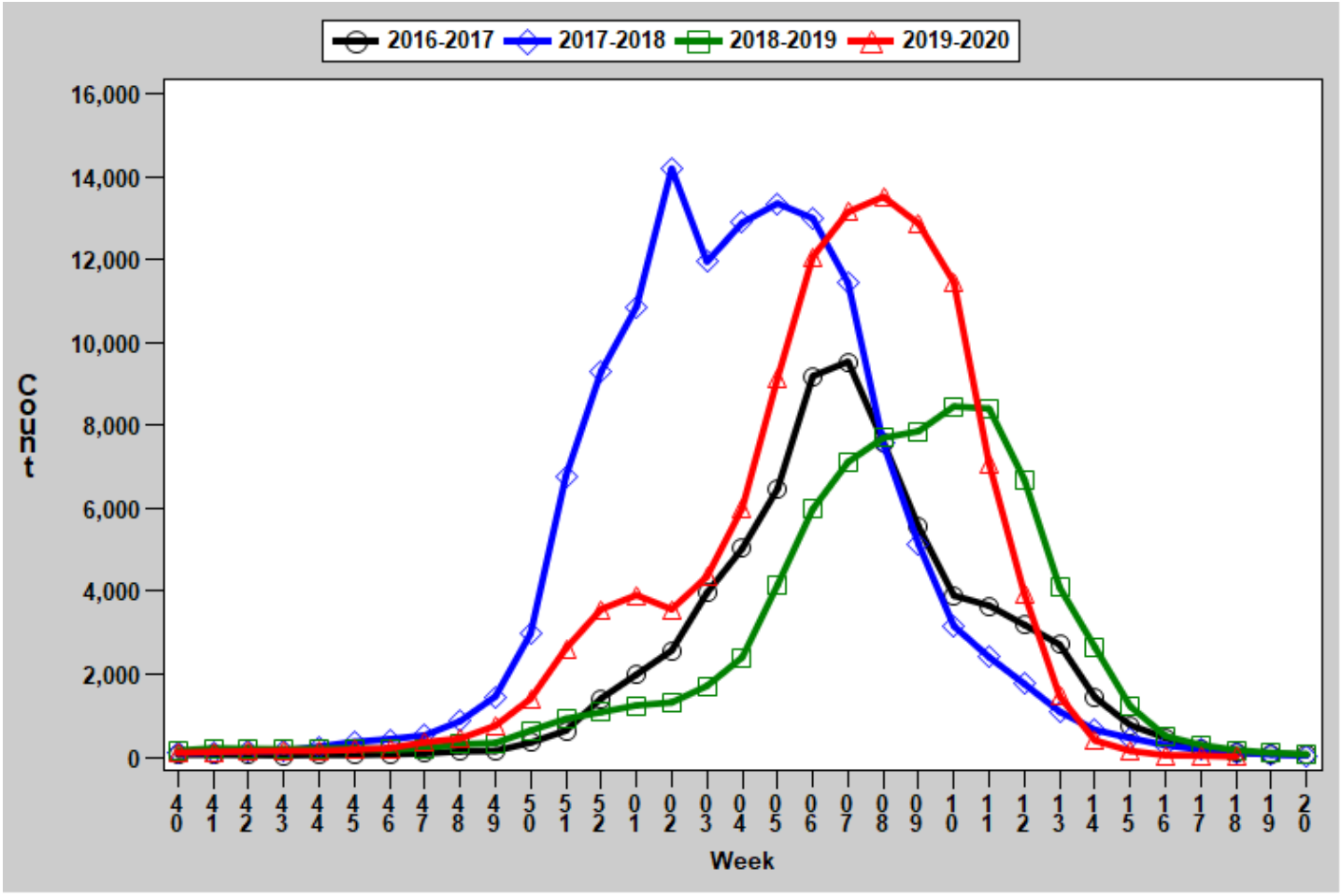
†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
‡Incidence Rate per 100,000 population

Figure 3. Number of Laboratory-positive[†] Influenza Cases and Case Rates by Region, Missouri, CDC Week 18 (April 26, 2020 – May 2, 2020)[*‡]

Region	Week 18 Cases	Week 18 Rate[‡]	2019-2020* Season-to-Date	2019-2020* Season-to-Date Rate[‡]
Central	4	0.59	15,087	2,228.51
Eastern	2	0.09	31,710	1,399.29
Northwest	2	0.13	33,151	2,075.15
Southeast	1	0.21	12,722	2,697.06
Southwest	2	0.19	20,653	1,927.84
Total	11	0.18	113,323	1,862.74

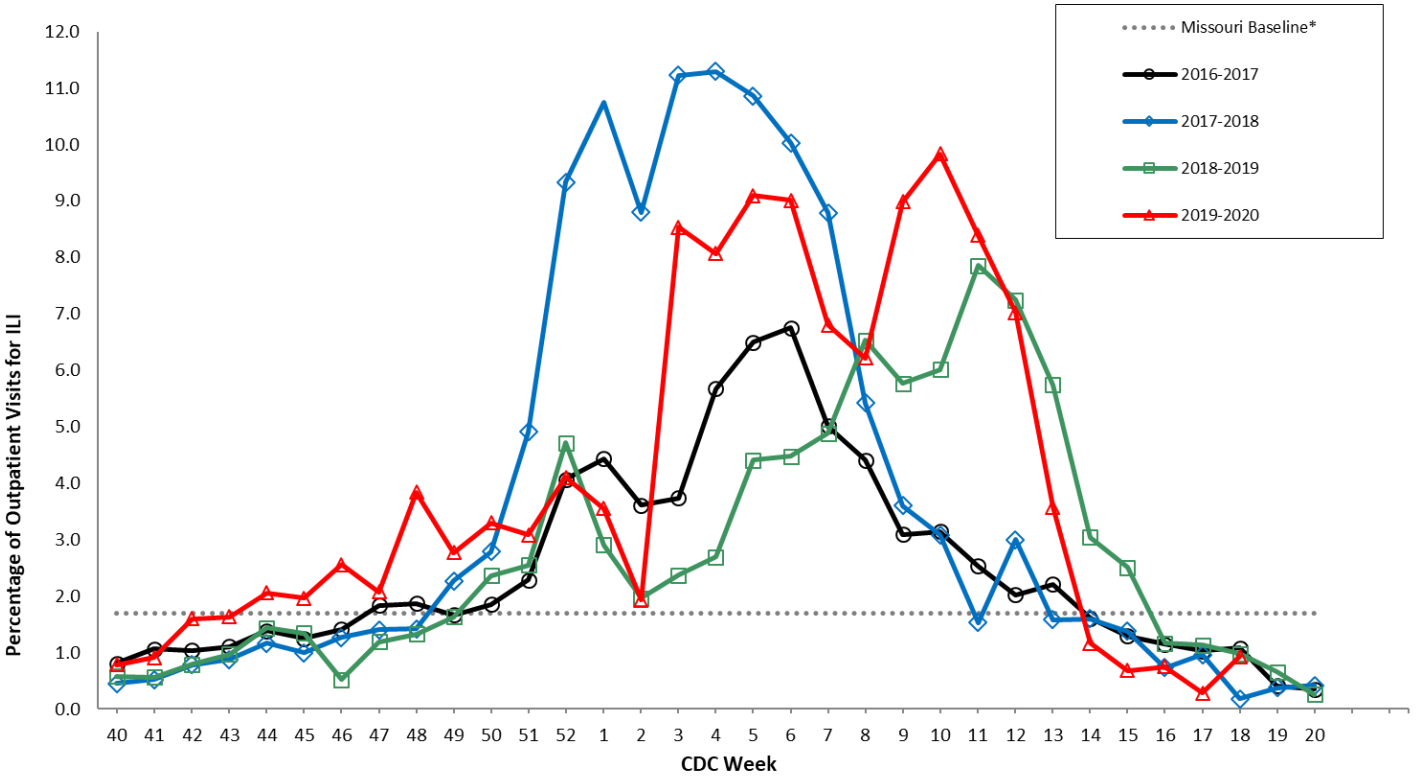
[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
[‡]Incidence Rate per 100,000 population

Figure 4. Number of Laboratory-positive[†] Influenza Cases by CDC Week, Missouri, 2016-2020[*]



[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).Data Source: Missouri Health Information Surveillance System (WebSurv).

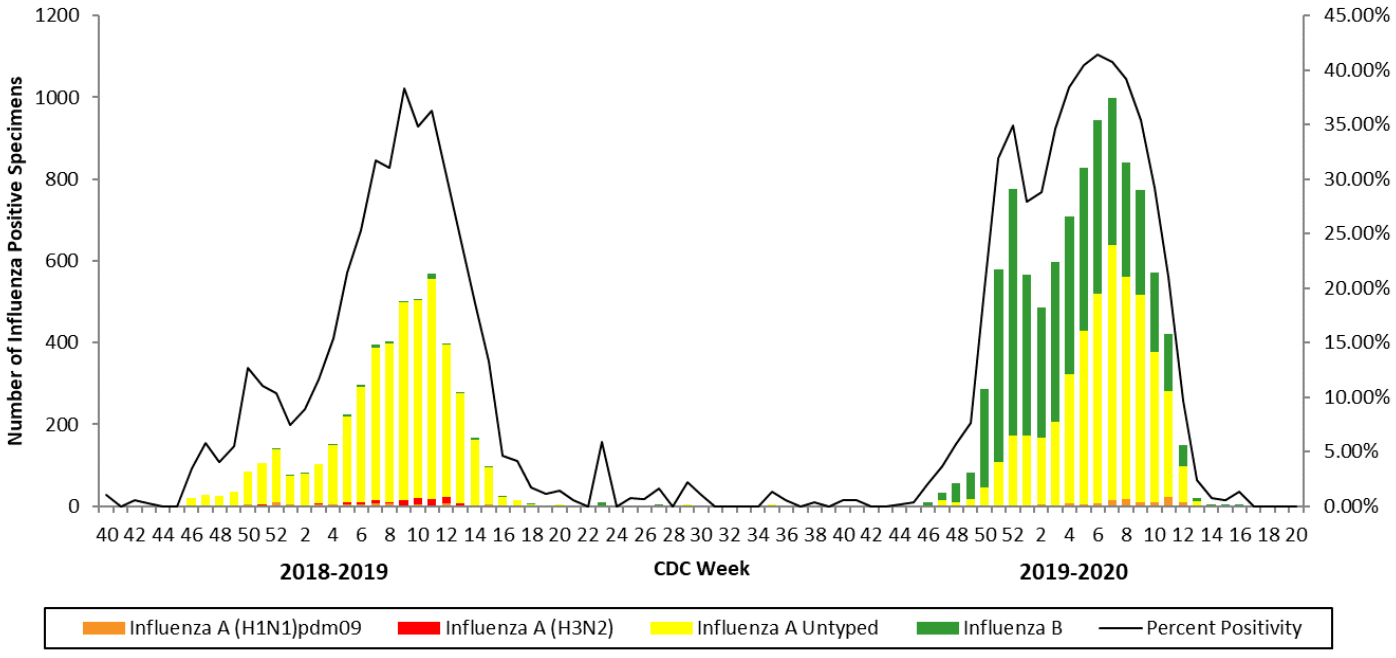
Figure 5. Percentage of Outpatient Visits for Influenza-like Illness (ILI), Missouri Outpatient ILI Surveillance Network (ILINet) 2016-2020*†



*The ILINet Region 7 (MO, IA, KS, NE) baseline is the mean percentage of patient visits for ILI during non-influenza weeks for the previous three seasons, plus two standard deviations. A non-influenza week is defined as periods of two or more consecutive weeks in which each week accounted for less than 2% of the season's total number of specimens that tested positive for influenza. Data Source: U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Centers for Disease Control and Prevention (CDC).

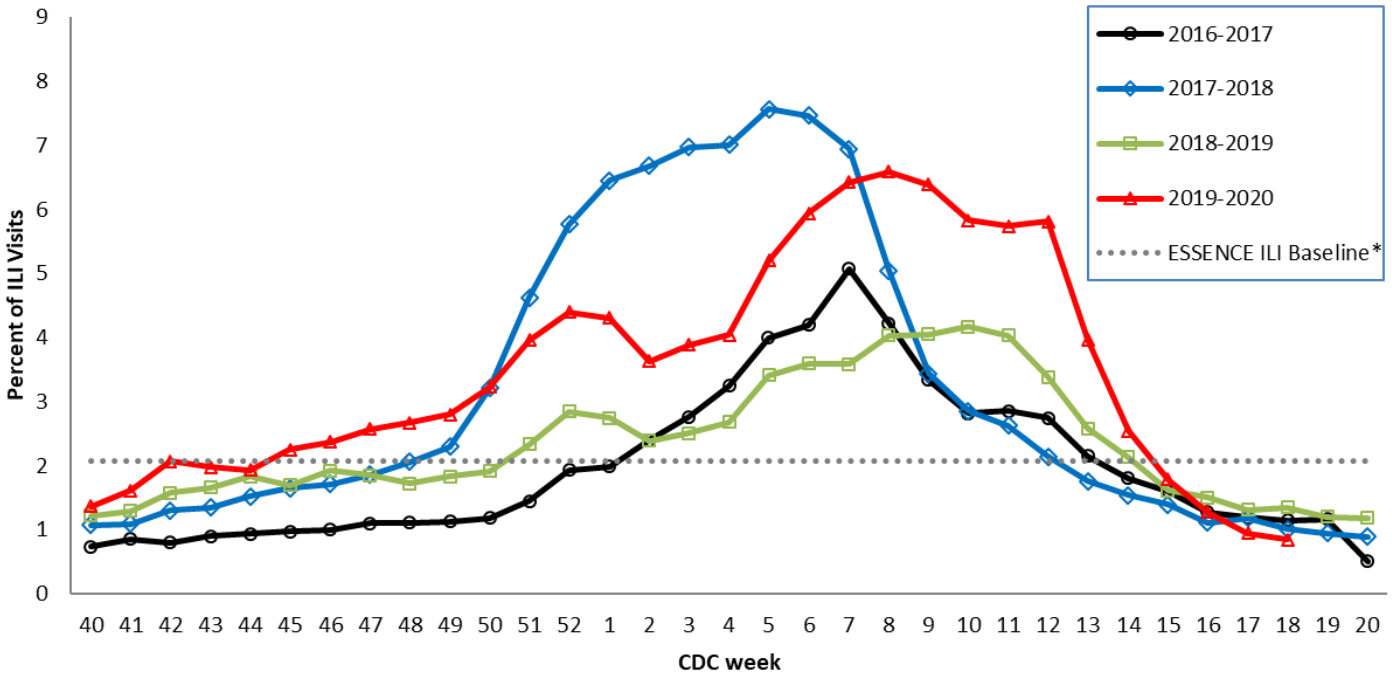
†2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).

Figure 6. Season-to-Date PCR (+) Tests for Influenza in Missouri



Data Source: National Respiratory and Enteric Virus Surveillance System (NREVSS), Centers for Disease Control and Prevention (CDC). 2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).

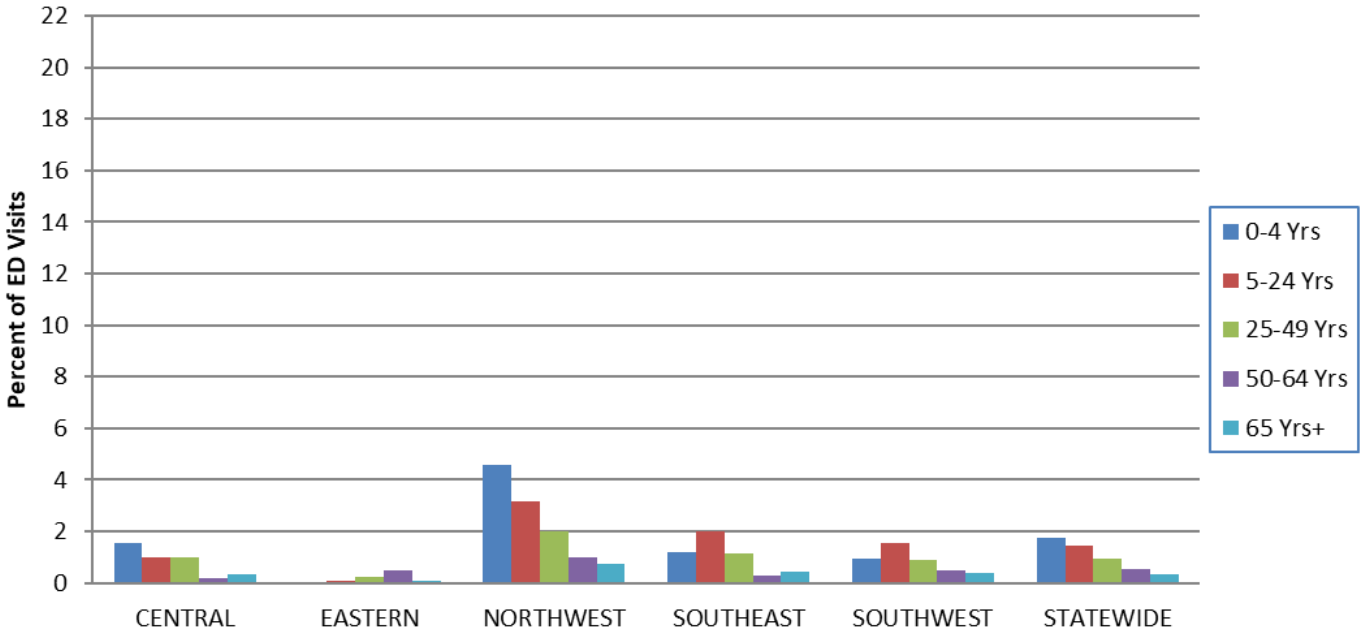
Figure 7. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, 2016-2020 Influenza Seasons*‡



*The ESSENCE ILI Baseline is the mean percent of ILI visits for each week during the previous three years (2016-18) when percentage of ILI visits were less than 2% of total visits, plus two standard deviations. Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.

‡The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 8. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Age Group, Region and Statewide, Week 18, 2020*



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
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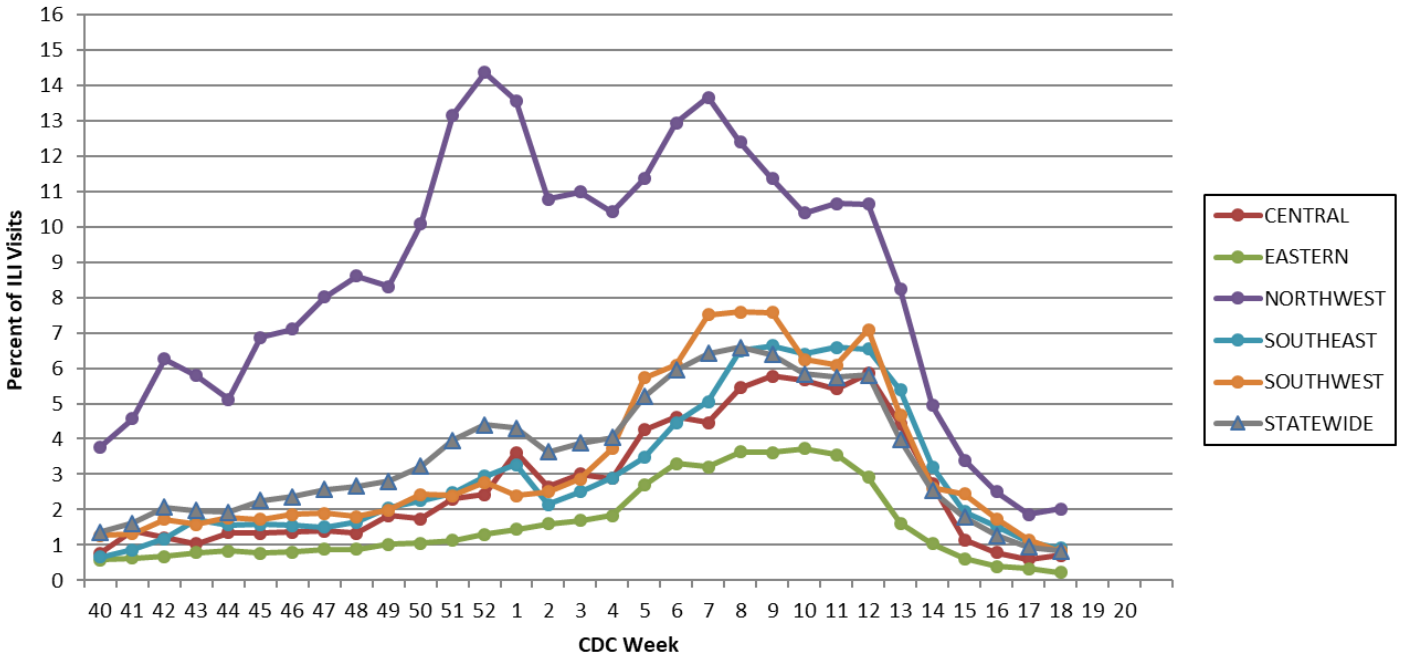
Figure 9. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Region and Statewide, 2019-2020 Influenza Season*



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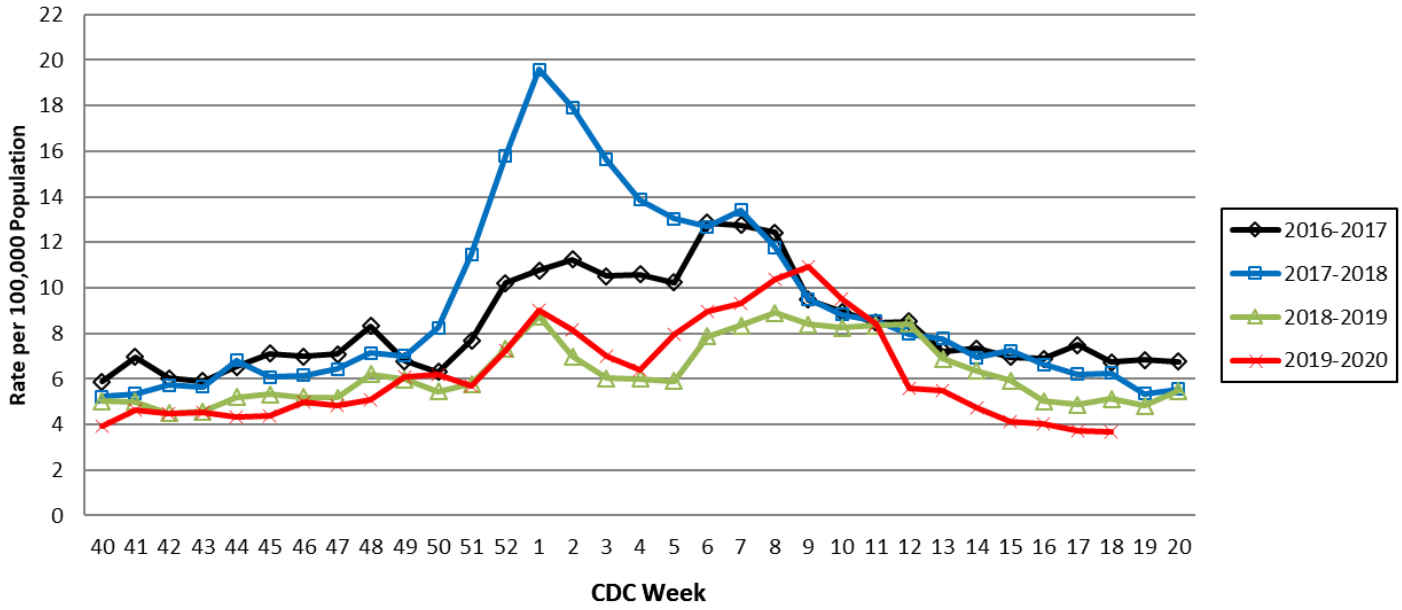
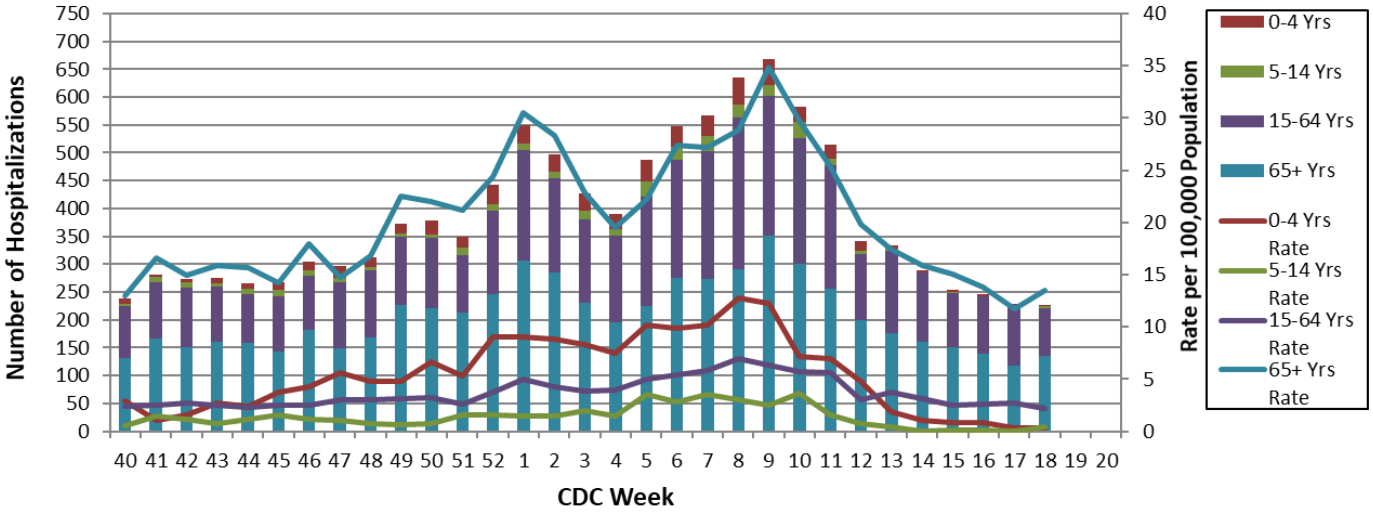
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 10. Weekly Rate of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Missouri Hospitals, 2016-2020 Influenza Seasons



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.
Population data from Missouri Census Data Center 2017 (https://census.missouri.edu).

Figure 11. Number of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Participating Missouri Hospitals, by Age Group, Week 18, 2019-2020 Influenza Season



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.

Additional Influenza Data Sources:

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http://www.cdc.gov/flu/weekly/fluactivitysurv.htm

The National Respiratory and Enteric Virus Surveillance System (NREVSS):
https://www.cdc.gov/surveillance/nrevss/

World Health Organization: International Influenza Surveillance:
http://www.who.int/influenza/surveillance_monitoring/en/

Missouri Weekly Influenza Surveillance Report
2019-2020 Influenza Season[1]

Week 19: May 3, 2020 – May 9, 2020

All data are preliminary and may change as more reports are received.

Summary:

- The estimated influenza activity in Missouri is Sporadic[2].

- A total of 5 laboratory-positive[3] influenza cases (2 influenza and 3 influenza B) were reported during Week 19. The season-to-date total of laboratory-positive influenza cases is 113,345 (48.5% influenza A, 50.7% influenza B, and 0.8% untyped). The percentage of respiratory specimens testing positive for influenza in Missouri laboratories reporting to the National Respiratory and Enteric Virus Surveillance System (NREVSS) slightly increased during Week 19 (Figure 6). Influenza test results from the Missouri State Public Health Laboratory (MSPHL) are currently not available. The MSPHL has temporarily suspended routine influenza testing in order to divert available resources to COVID-19 testing.

- Influenza-like illness (ILI) activity was below baseline for the Missouri Outpatient ILI Surveillance Network (ILINet) and for the hospital emergency room visit chief complaint data reported through ESSENCE. The reported percentage of visits for ILI was 0.32% (Figure 5) and 0.65% (Figure 7) through ILINet and ESSENCE respectively.[4] The ILI data from a small number of sites located in the Northwest Region of the state is currently unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

- A season-to-date total of 100 influenza-associated deaths have been reported in Missouri as of Week 19.[5] During Week 18, 62 deaths involving Pneumonia and Influenza (P&I) were reported to the Bureau of Vital Records, resulting in a season-to-date total of 1,923 P&I associated deaths in Missouri.[6]

- Thirteen influenza outbreaks and eight school closures have been reported in Missouri as of Week 19.

- Seasonal influenza activity as reported by clinical laboratories in the United States remained low during Week 18. Influenza-like illness activity continued to decrease and is below the national baseline. National influenza surveillance information is prepared by CDC and is included in the weekly FluView report, which is available online at http://www.cdc.gov/flu/weekly/fluactivitysurv.htm.

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[1]The 2019-2020 influenza season begins CDC Week 40 (week ending October 5, 2019) and ends CDC Week 39 (week ending September 26, 2020).

[2]Sporadic is defined as: Small numbers of laboratory-confirmed influenza cases or a single laboratory-confirmed influenza outbreak has been reported, but there is no increase in cases of ILI.

[3]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.

[4]Influenza-like illness (ILI) is defined by ILINet as fever (temperature of 100°F [37.8°C] or greater) and a cough and/or a sore throat without a known cause other than influenza. ILI is defined by ESSENCE as Emergency Department chief complaints for Influenza or (FeverPlus and (Cough or SoreThroat) and not NonILIFevers).

[5]All influenza-associated deaths became reportable in Missouri in 2016. These reports are verified by local public health agencies and DHSS.

[6]The P&I data are obtained from vital statistics data using ICD-10 codes, which are available one week later. The P&I data for the CDC Week provided is the most current data available.

Surveillance Data:

Interactive Maps

The jurisdiction-specific influenza data are provided though interactive maps available at http://bit.ly/moflu19. *Click on the jurisdiction to view the influenza data specific to that jurisdiction.*

- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, CDC Week 19**
- **Reported Week-specific Rate per 100,000 Population, CDC Week 19**
- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, Season-to-Date**
- **Reported Rate per 100,000 Population, Season-to-Date**

Data Figures

Figure 1. Number of Laboratory-positive† Influenza Cases by Influenza Type, Missouri, CDC Week 19 (April 3, 2020 – May 9, 2020)*

Influenza Type	Week 17	Week 18	Week 19	2019-2020* Season-to-Date
Influenza A	24	8	2	55,021
Influenza B	14	10	3	57,455
Influenza Unknown Or Untyped	4	0	0	869
Total	42	18	5	113,345

†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv).

Figure 2. Number of Laboratory-positive† Influenza Cases and Case Rates by Age Group, Missouri, CDC Week 19 (April 3, 2020 – May 9, 2020)*‡

Age Group	Week 19 Cases	Week 19 Rate‡	2019-2020* Season-to-Date	2019-2020* Season-to-Date Rate‡
00-04	1	0.27	19,538	5,219.04
05-24	1	0.06	49,453	3,082.12
25-49	1	0.05	26,911	1,406.38
50-64	1	0.08	10,791	872.79
65+	1	0.10	6,651	696.50
Total	5	0.08	113,345	1,863.10

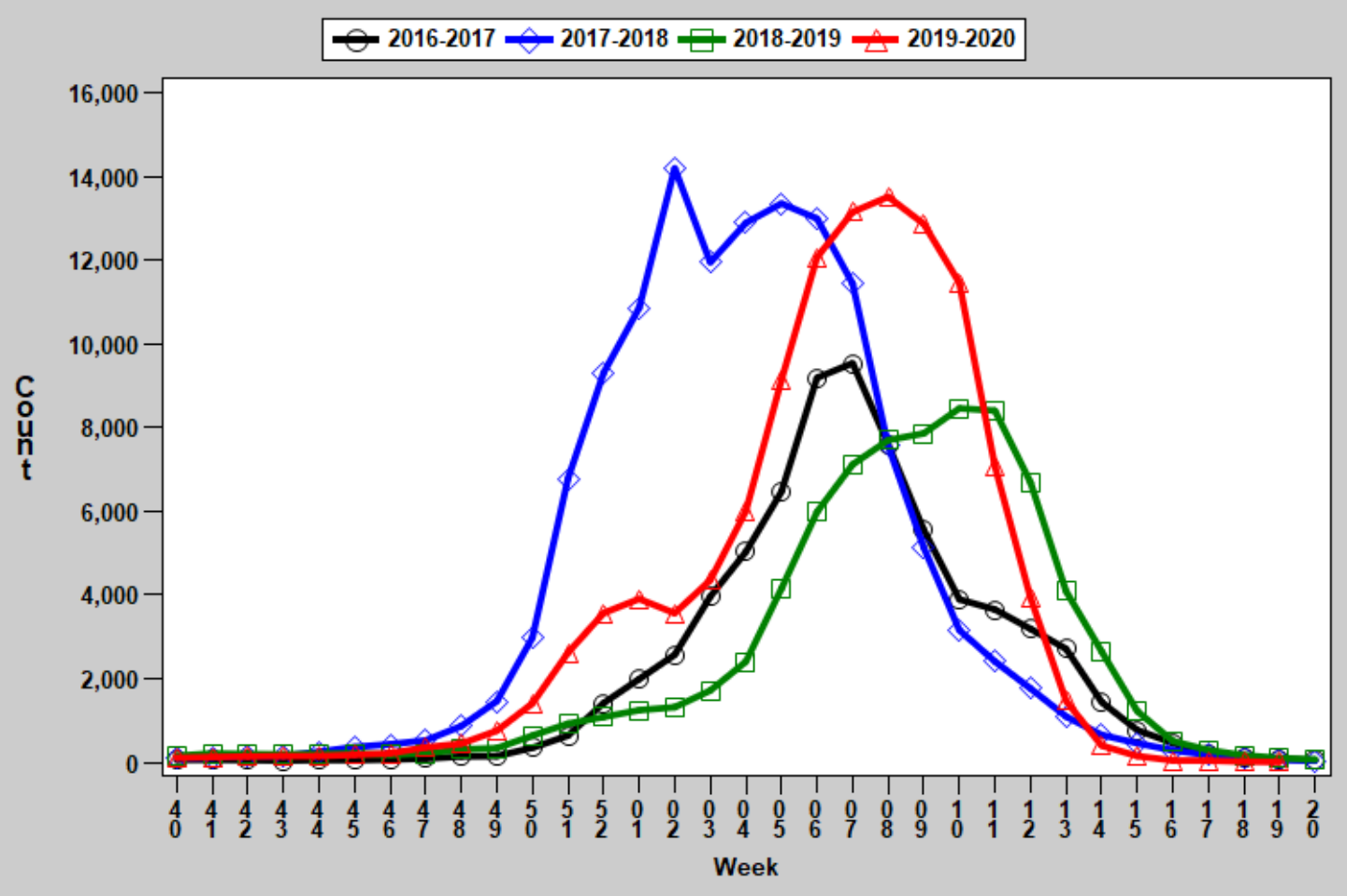
†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
‡Incidence Rate per 100,000 population

Figure 3. Number of Laboratory-positive† Influenza Cases and Case Rates by Region, Missouri, CDC Week 19 (April 3, 2020 – May 9, 2020)*‡

Region	Week 19 Cases	Week 19 Rate‡	2019-2020* Season-to-Date	2019-2020* Season-to-Date Rate‡
Central	2	0.30	15,092	2,229.25
Eastern	1	0.04	31,716	1,399.55
Northwest	0	0.00	33,151	2,075.15
Southeast	0	0.00	12,730	2,698.75
Southwest	2	0.19	20,656	1,928.12
Total	5	0.08	113,345	1,863.10

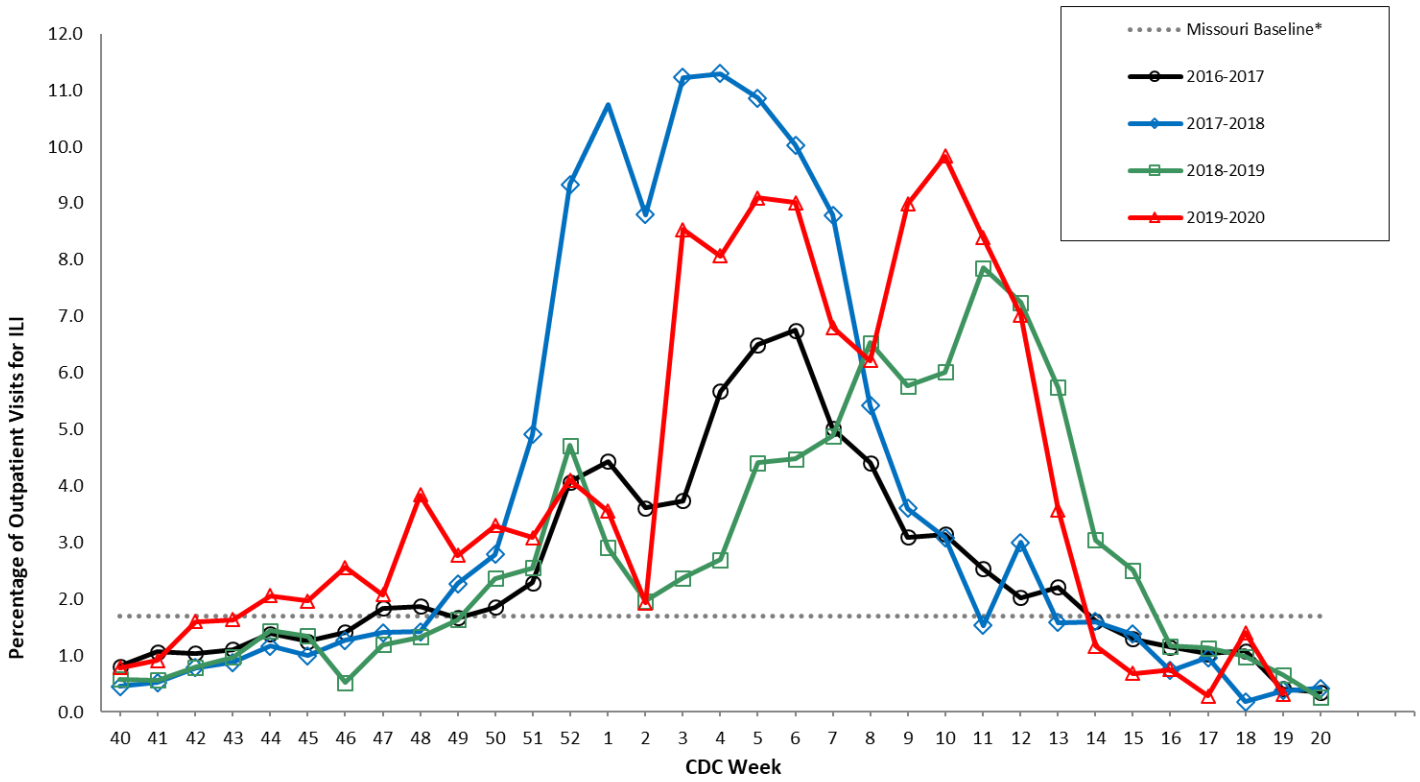
†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
‡Incidence Rate per 100,000 population

Figure 4. Number of Laboratory-positive† Influenza Cases by CDC Week, Missouri, 2016-2020*



†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).Data Source: Missouri Health Information Surveillance System (WebSurv).

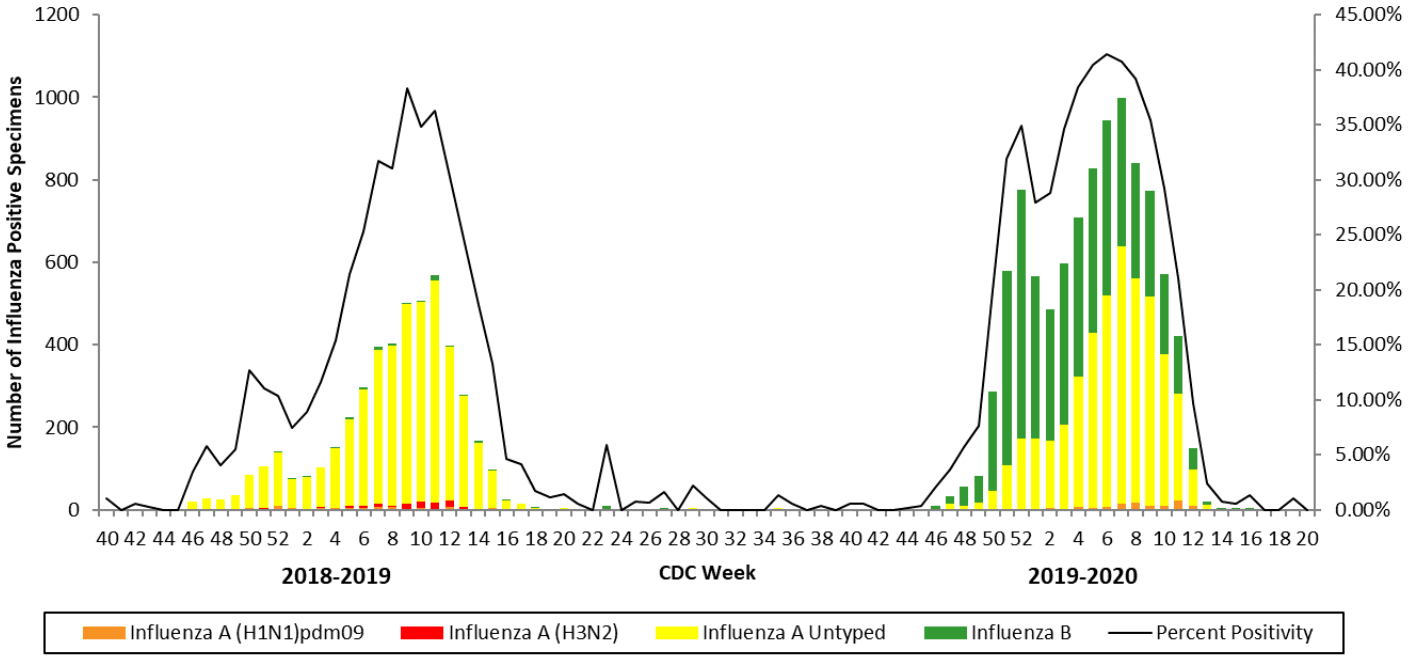
Figure 5. Percentage of Outpatient Visits for Influenza-like Illness (ILI), Missouri Outpatient ILI Surveillance Network (ILINet) 2016-2020*†



*The ILINet Region 7 (MO, IA, KS, NE) baseline is the mean percentage of patient visits for ILI during non-influenza weeks for the previous three seasons, plus two standard deviations. A non-influenza week is defined as periods of two or more consecutive weeks in which each week accounted for less than 2% of the season's total number of specimens that tested positive for influenza. Data Source: U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Centers for Disease Control and Prevention (CDC).

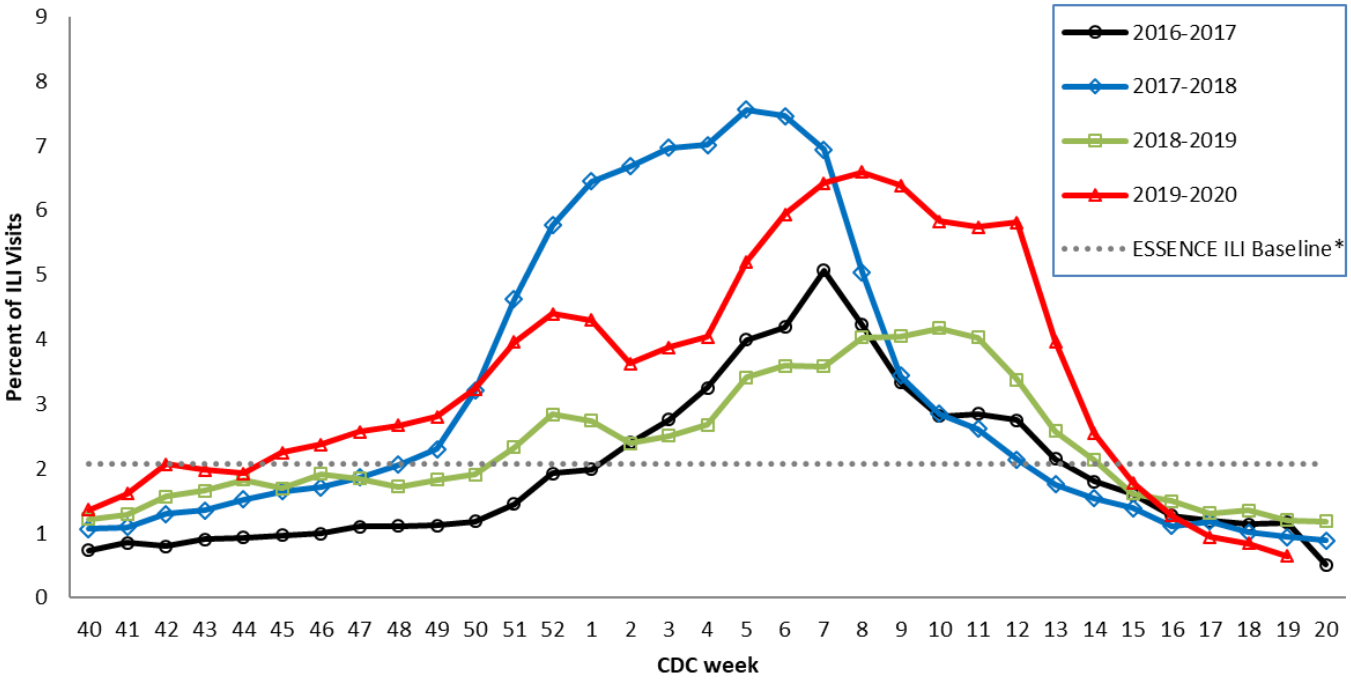
†2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).

Figure 6. Season-to-Date PCR (+) Tests for Influenza in Missouri



Data Source: National Respiratory and Enteric Virus Surveillance System (NREVSS), Centers for Disease Control and Prevention (CDC). 2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).

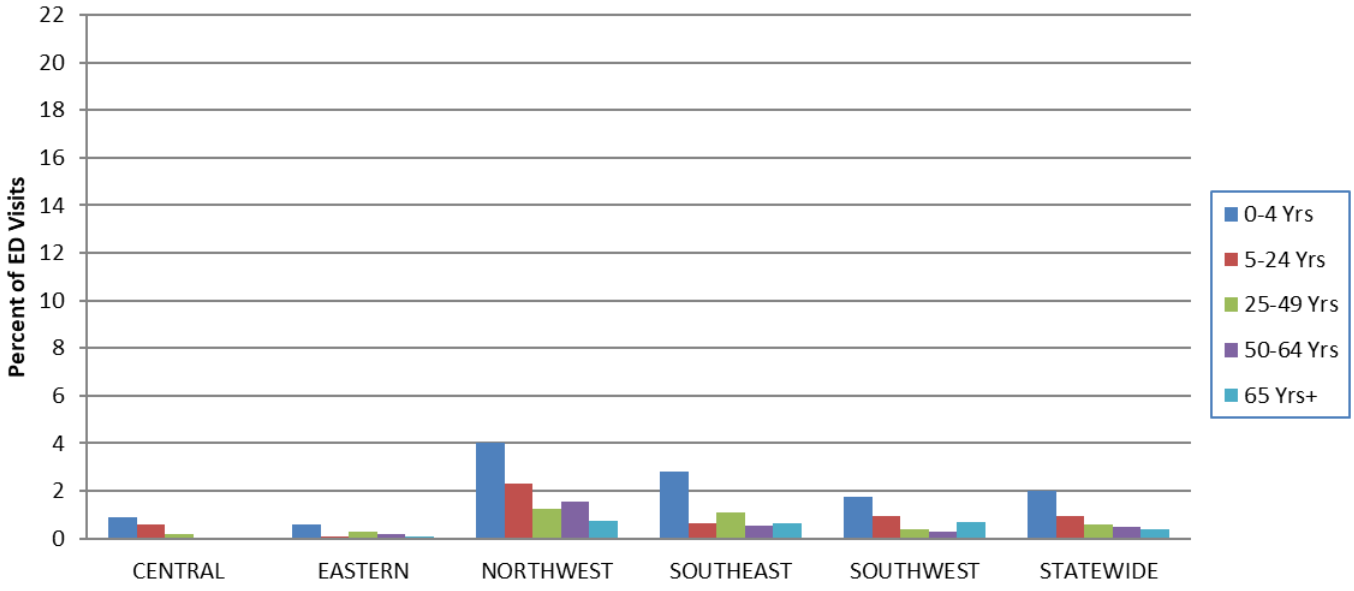
Figure 7. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, 2016-2020 Influenza Seasons*‡



*The ESSENCE ILI Baseline is the mean percent of ILI visits for each week during the previous three years (2016-18) when percentage of ILI visits were less than 2% of total visits, plus two standard deviations. Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.

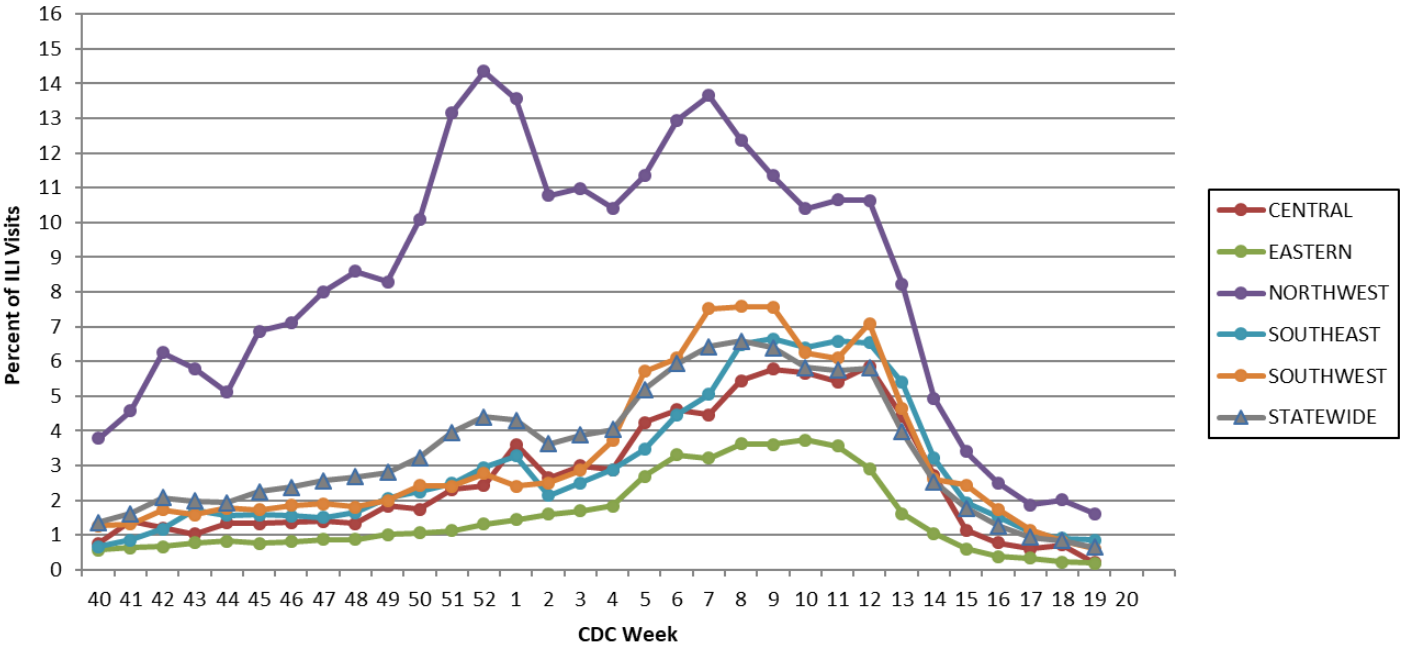
‡The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 8. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Age Group, Region and Statewide, Week 19, 2020*



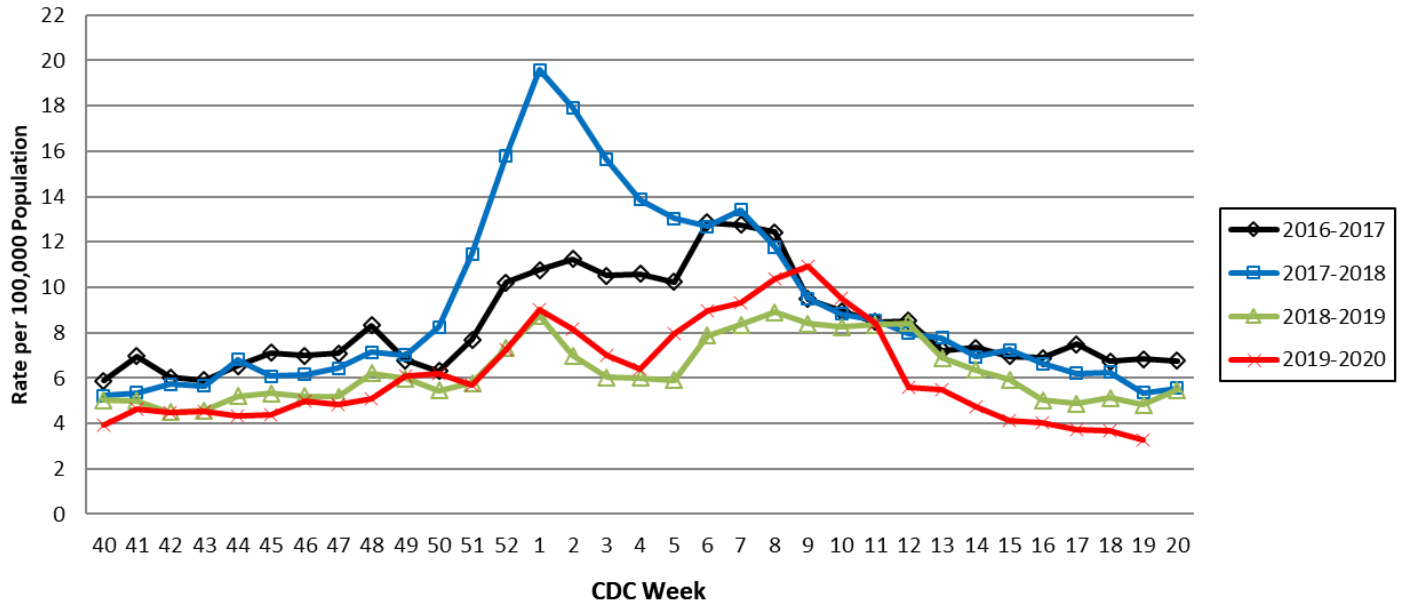
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 9. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Region and Statewide, 2019-2020 Influenza Season*



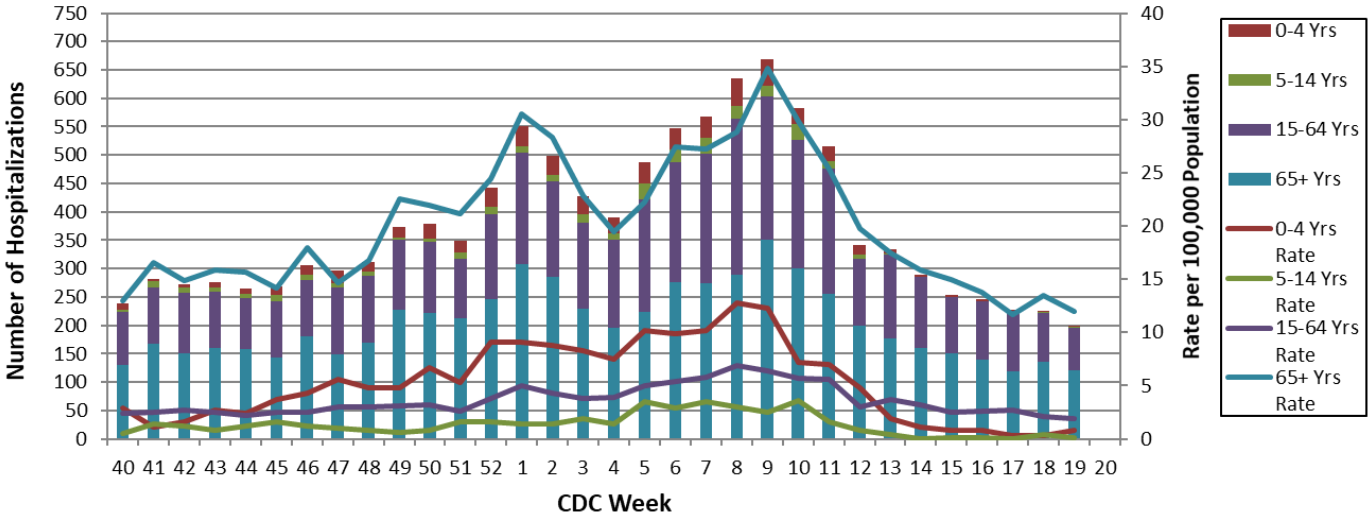
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 10. Weekly Rate of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Missouri Hospitals, 2016-2020 Influenza Seasons



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.
Population data from Missouri Census Data Center 2017 (https://census.missouri.edu).

Figure 11. Number of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Participating Missouri Hospitals, by Age Group, Week 19, 2019-2020 Influenza Season



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.

Additional Influenza Data Sources:

Centers for Disease Control and Prevention: National Influenza Surveillance (FluView):
http://www.cdc.gov/flu/weekly/fluactivitysurv.htm

The National Respiratory and Enteric Virus Surveillance System (NREVSS):
https://www.cdc.gov/surveillance/nrevss/

World Health Organization: International Influenza Surveillance:
http://www.who.int/influenza/surveillance_monitoring/en/

Missouri Weekly Influenza Surveillance Report 2019-2020 Influenza Season[1]

Week 20: May 10, 2020 – May 16, 2020

All data are preliminary and may change as more reports are received.

Summary:

- The estimated influenza activity in Missouri is Sporadic[2].
- A total of 27 laboratory-positive[3] influenza cases (8 influenza A, 17 influenza B and 2 untyped) were reported during Week 20. The season-to-date total of laboratory-positive influenza cases is 113,395 (48.5% influenza A, 50.7% influenza B, and 0.8% untyped). The percentage of respiratory specimens testing positive for influenza in Missouri laboratories reporting to the National Respiratory and Enteric Virus Surveillance System (NREVSS) decreased during Week 20 (Figure 6). Influenza test results from the Missouri State Public Health Laboratory (MSPHL) are currently not available. The MSPHL has temporarily suspended routine influenza testing in order to divert available resources to COVID-19 testing.
- Influenza-like illness (ILI) activity was below baseline for the Missouri Outpatient ILI Surveillance Network (ILINet) and for the hospital emergency room visit chief complaint data reported through ESSENCE. The reported percentage of visits for ILI was 0.23% (Figure 5) and 0.52% (Figure 7) through ILINet and ESSENCE respectively.[4] The ILI data from a small number of sites located in the Northwest Region of the state is currently unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.
- A season-to-date total of 101 influenza-associated deaths have been reported in Missouri as of Week 20.[5] During Week 19, 44 deaths involving Pneumonia and Influenza (P&I) were reported to the Bureau of Vital Records, resulting in a season-to-date total of 1,967 P&I associated deaths in Missouri.[6]
- Thirteen influenza outbreaks and eight school closures have been reported in Missouri as of Week 20.
- Seasonal influenza activity as reported by clinical laboratories in the United States remained low during Week 19. Influenza-like illness activity continued to decrease and is below the national baseline. National influenza surveillance information is prepared by CDC and is included in the weekly FluView report, which is available online at http://www.cdc.gov/flu/weekly/fluactivitysurv.htm.

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[1]The 2019-2020 influenza season begins CDC Week 40 (week ending October 5, 2019) and ends CDC Week 39 (week ending September 26, 2020).

[2]Sporadic is defined as: Small numbers of laboratory-confirmed influenza cases or a single laboratory-confirmed influenza outbreak has been reported, but there is no increase in cases of ILI.

[3]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.

[4]Influenza-like illness (ILI) is defined by ILINet as fever (temperature of 100°F [37.8°C] or greater) and a cough and/or a sore throat without a known cause other than influenza. ILI is defined by ESSENCE as Emergency Department chief complaints for Influenza or (FeverPlus and (Cough or SoreThroat) and not NonILIFevers).

[5]All influenza-associated deaths became reportable in Missouri in 2016. These reports are verified by local public health agencies and DHSS.

[6]The P&I data are obtained from vital statistics data using ICD-10 codes, which are available one week later. The P&I data for the CDC Week provided is the most current data available.

Surveillance Data:

Interactive Maps

The jurisdiction-specific influenza data are provided though interactive maps available at http://bit.ly/moflu19. *Click on the jurisdiction to view the influenza data specific to that jurisdiction.*

- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, CDC Week 20**
- **Reported Week-specific Rate per 100,000 Population, CDC Week 20**
- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, Season-to-Date**
- **Reported Rate per 100,000 Population, Season-to-Date**

Data Figures

Figure 1. Number of Laboratory-positive† Influenza Cases by Influenza Type, Missouri, CDC Week 20 (May 10, 2020 – May 16, 2020)*

Influenza Type	Week 18	Week 19	Week 20	2019-2020* Season-to-Date
Influenza A	18	8	8	55,051
Influenza B	10	3	17	57,473
Influenza Unknown Or Untyped	0	0	2	871
Total	28	11	27	113,395

†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv).

Figure 2. Number of Laboratory-positive† Influenza Cases and Case Rates by Age Group, Missouri, CDC Week 20 (May 10, 2020 – May 16, 2020)*‡

Age Group	Week 20 Cases	Week 20 Rate‡	2019-2020* Season-to-Date	2019-2020* Season-to-Date Rate‡
00-04	0	0.00	19,538	5,219.04
05-24	4	0.25	49,459	3,082.49
25-49	10	0.52	26,928	1,407.26
50-64	6	0.49	10,808	874.17
65+	7	0.73	6,661	697.54
Total	27	0.44	113,395	1,863.92

†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 5, 2019 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
‡Incidence Rate per 100,000 population

Figure 3. Number of Laboratory-positive[†] Influenza Cases and Case Rates by Region, Missouri, CDC Week 20 (May 10, 2020 – May 16, 2020)[*‡]

Region	Week 20 Cases	Week 20 Rate[‡]	2019-2020* Season-to-Date	2019-2020* Season-to-Date Rate[‡]
Central	2	0.30	15,096	2,229.84
Eastern	22	0.97	31,756	1,401.32
Northwest	1	0.06	33,152	2,075.22
Southeast	1	0.21	12,732	2,699.18
Southwest	1	0.09	20,659	1,928.40
Total	27	0.44	113,395	1,863.92

[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
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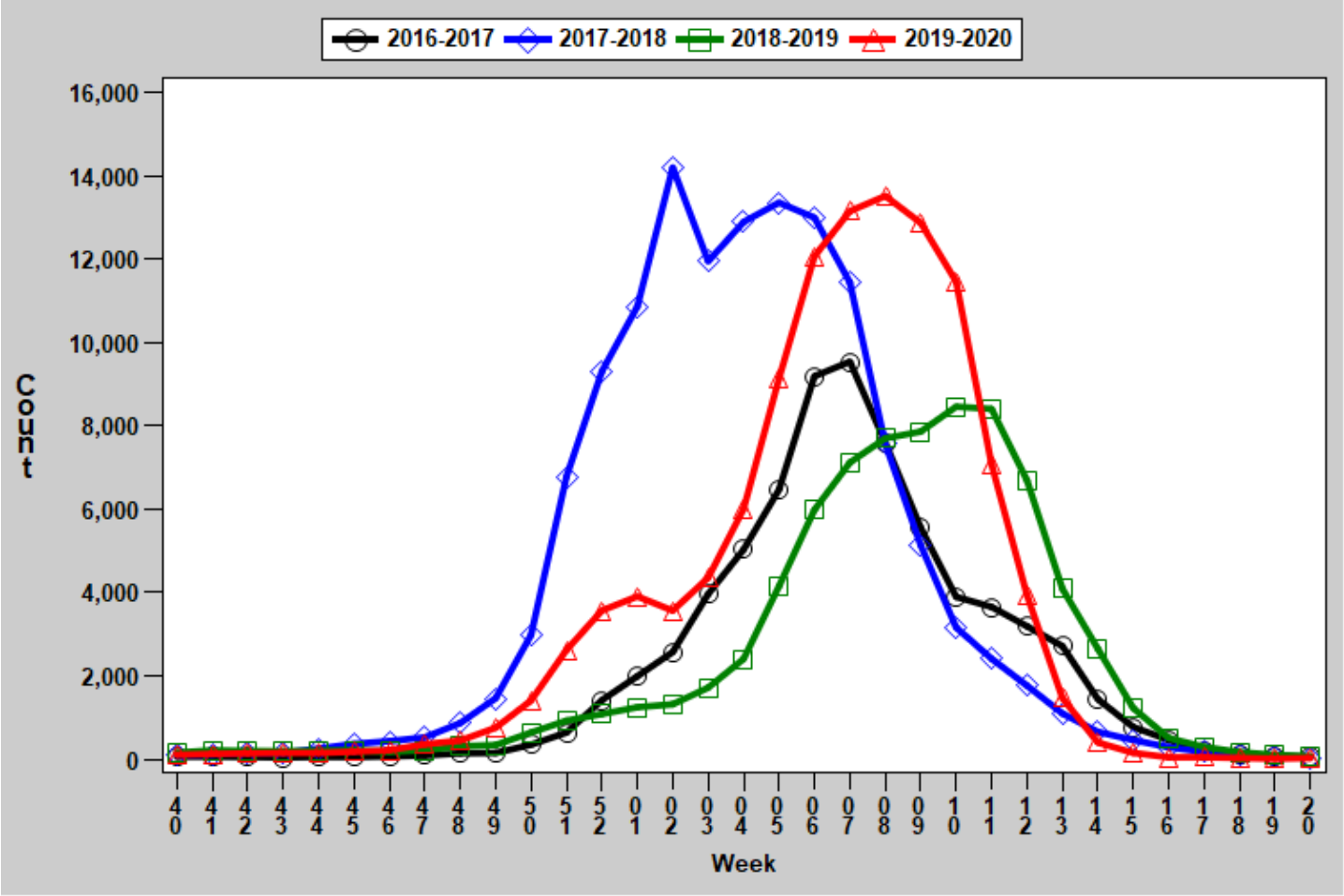
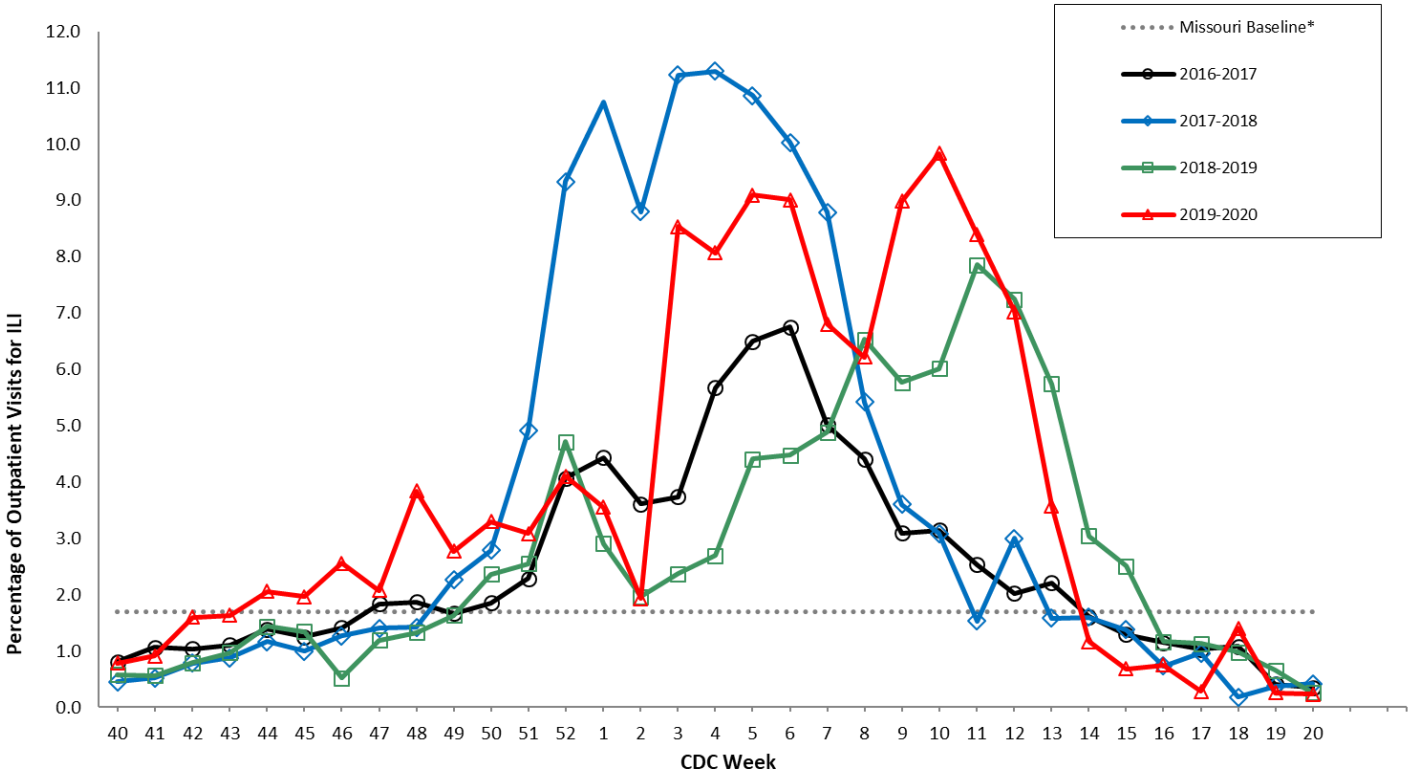
[‡]Incidence Rate per 100,000 population

Figure 4. Number of Laboratory-positive[†] Influenza Cases by CDC Week, Missouri, 2016-2020[*]



[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).Data Source: Missouri Health Information Surveillance System (WebSurv).

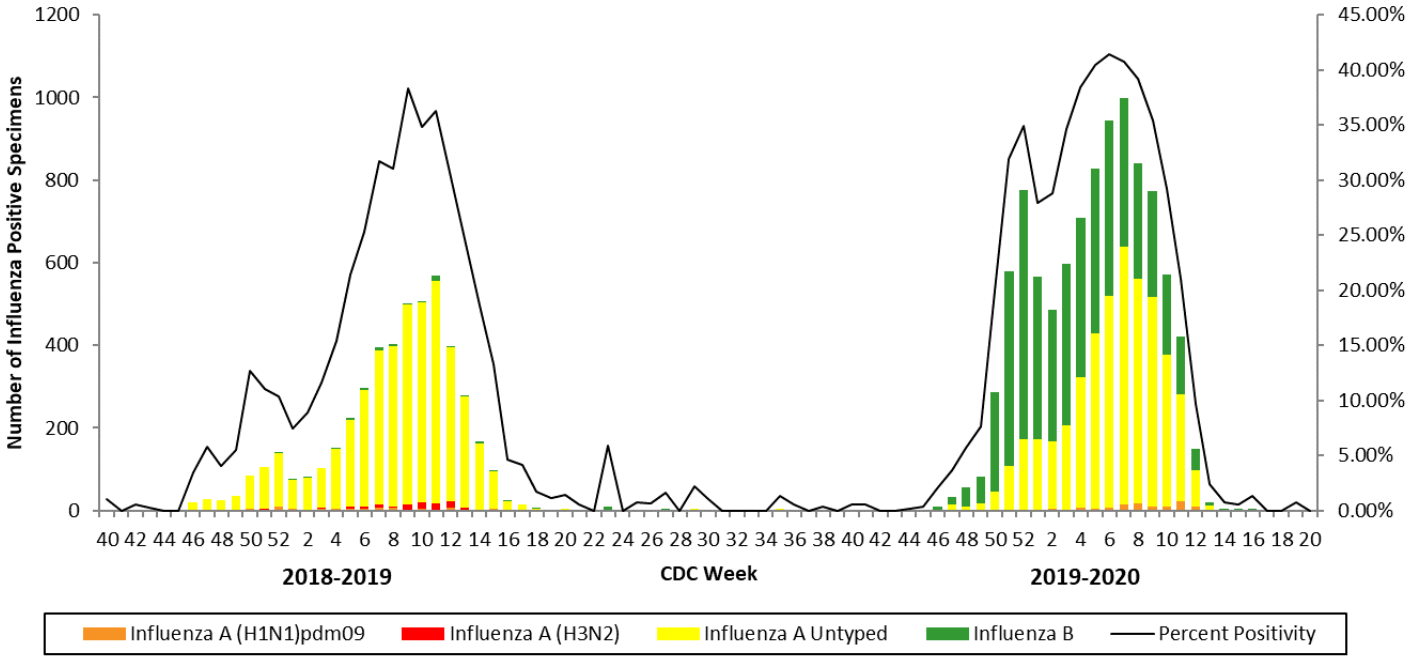
Figure 5. Percentage of Outpatient Visits for Influenza-like Illness (ILI), Missouri Outpatient ILI Surveillance Network (ILINet) 2016-2020*†



*The ILINet Region 7 (MO, IA, KS, NE) baseline is the mean percentage of patient visits for ILI during non-influenza weeks for the previous three seasons, plus two standard deviations. A non-influenza week is defined as periods of two or more consecutive weeks in which each week accounted for less than 2% of the season's total number of specimens that tested positive for influenza. Data Source: U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Centers for Disease Control and Prevention (CDC).

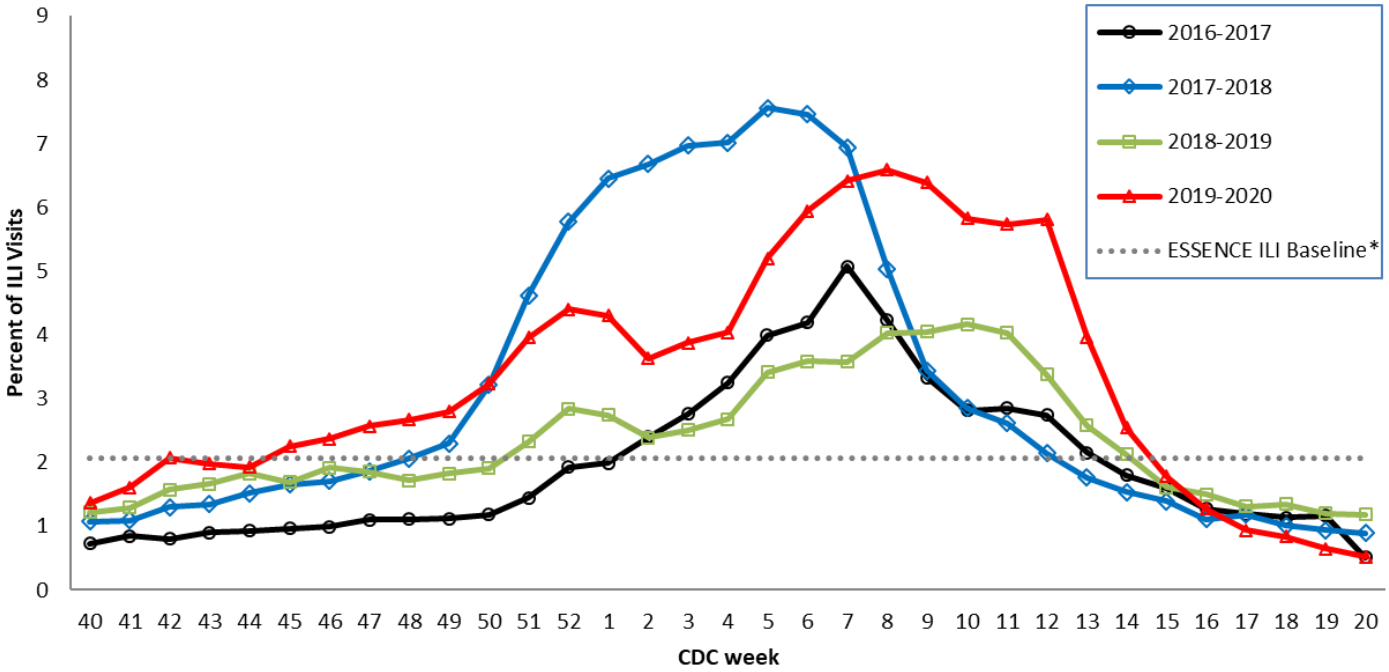
†2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).

Figure 6. Season-to-Date PCR (+) Tests for Influenza in Missouri



Data Source: National Respiratory and Enteric Virus Surveillance System (NREVSS), Centers for Disease Control and Prevention (CDC). 2019-2020 season-to-date through the week ending May 16, 2020 (Week 20).

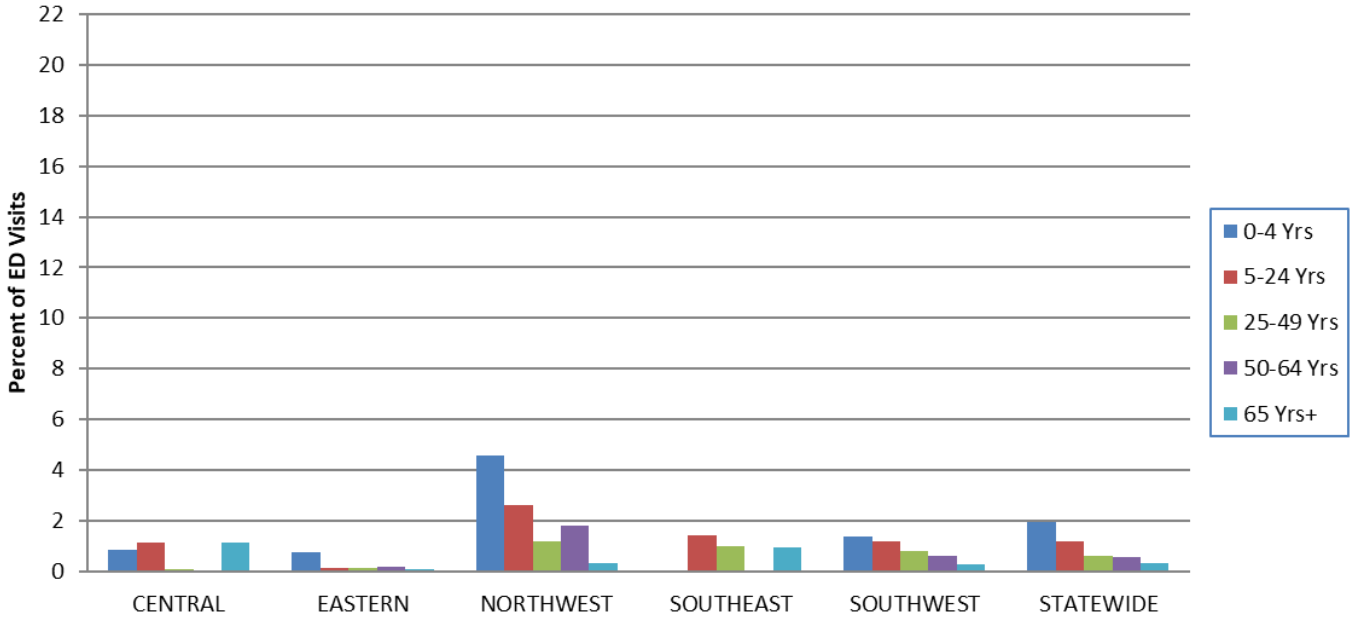
Figure 7. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, 2016-2020 Influenza Seasons*‡



*The ESSENCE ILI Baseline is the mean percent of ILI visits for each week during the previous three years (2016-18) when percentage of ILI visits were less than 2% of total visits, plus two standard deviations. Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.

‡The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 8. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Age Group, Region and Statewide, Week 20, 2020*



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.

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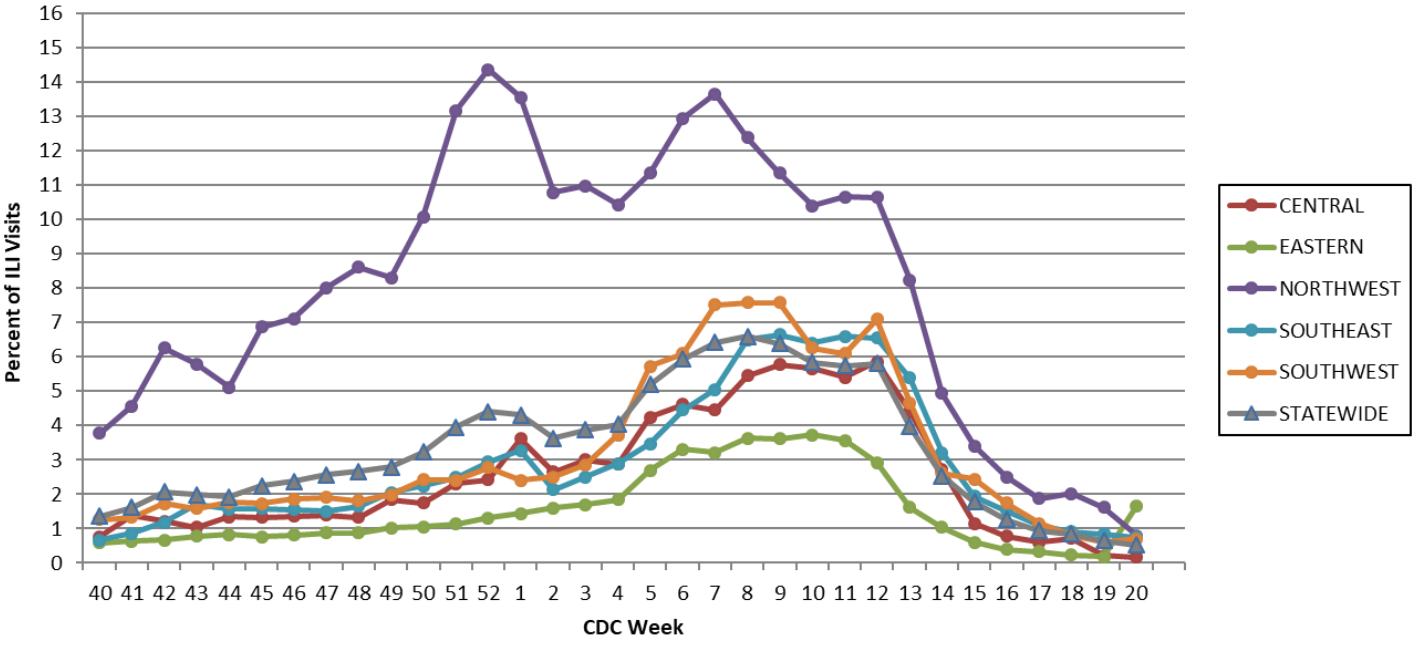

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Figure 10. Weekly Rate of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Missouri Hospitals, 2016-2020 Influenza Seasons

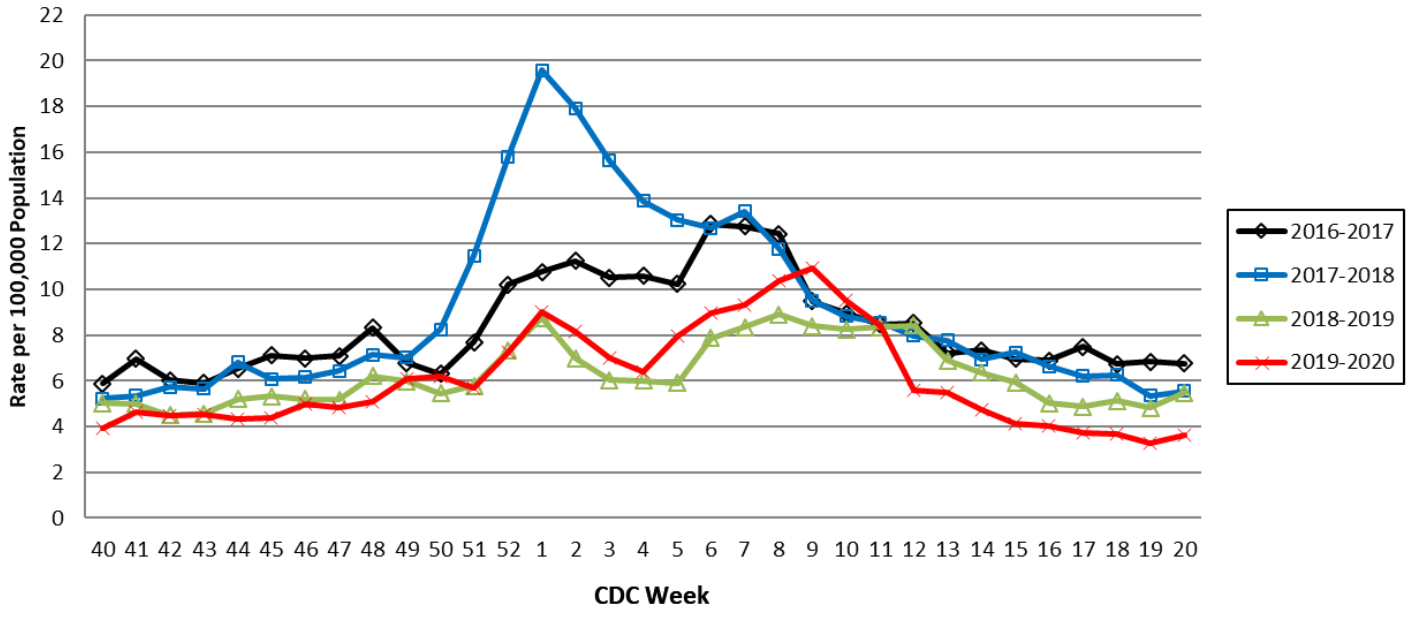

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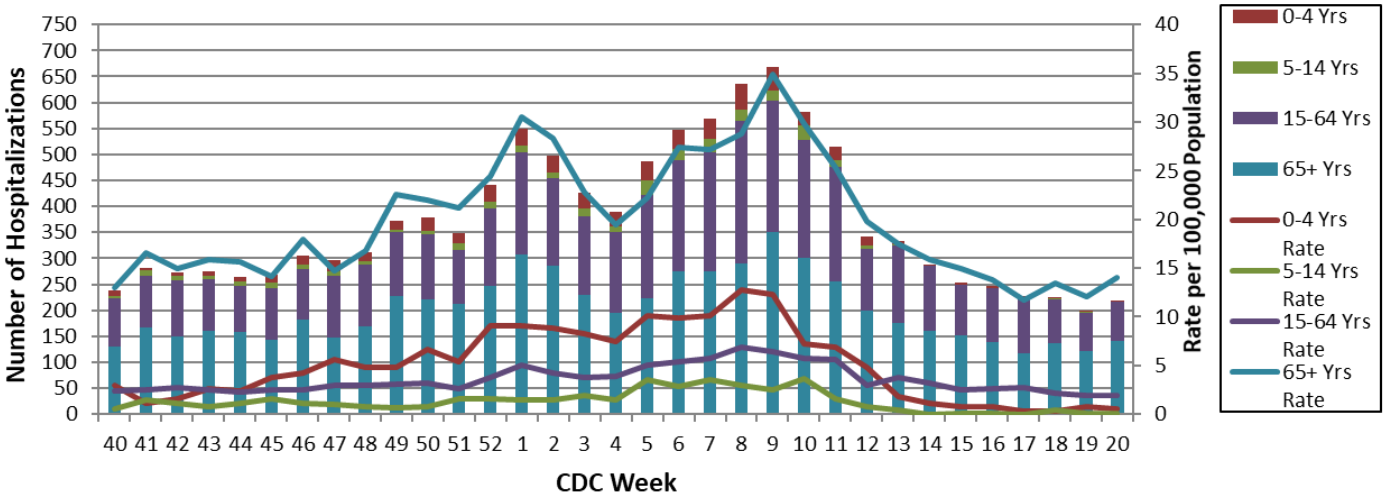
Figure 11. Number of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Participating Missouri Hospitals, by Age Group, Week 20, 2019-2020 Influenza Season



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The National Respiratory and Enteric Virus Surveillance System (NREVSS):
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World Health Organization: International Influenza Surveillance:
http://www.who.int/influenza/surveillance_monitoring/en/